Civil Engineering Database Subject Heading Index

The **Civil Engineering Database (CEDB)** is designed to provide free, easy bibliographic access to all ASCE publications. The database covers ASCE documents published since 1970. It provides access to all the journals, conference proceedings, books, standards, manuals, magazines, and newspapers. The index terms below were assigned to papers published in this journal during 2009 from a CEDB subject heading list. The CEDB and subject heading list can be accessed on the Web at *http://cedb.asce.org/*.

Abutments

Turbulent Stresses at the Bottom Surface near an Abutment: Laboratory-Scale Numerical Experiment — Anna Teruzzi, Francesco Ballio, and Vincenzo Armenio; 135 (2), 106-17 (2009).

Acoustic techniques

Mean Flow and Turbulence around a Laboratory Spur Dike — Jennifer G. Duan; 135 (10), 803-11 (2009).

Investigation of Two Elemental Error Sources in Boat-Mounted Acoustic Doppler Current Profiler Measurements by Large Eddy Simulations — T. Tokyay, G. Constantinescu, and Juan A. Gonzalez-Castro; 135 (11), 875-87 (2009).

Aeration

Resistance Characteristics of Surface Aerators — Achanta Ramakrishna Rao and Bimlesh Kumar; 135 (1), 38-44 (2009).

Kinetic Energy Approach to Dissolving Axisymmetric Multiphase Plumes — Kristian Etienne Einarsrud and Iver Brevik; 135 (12), 1041-51 (2009).

Africa

Case Study: Hydraulic Modeling of Runoff Processes in Ghanaian Inland Valleys — Koichi Unami, Toshihiko Kawachi, Gordana Kranjac-Berisavljevic, Felix Kofi Abagale, Shigeya Maeda, and Junichiro Takeuchi; 135 (7), 539-53 (2009).

Air entrainment

Critical Submergence for Multiple Pipe Intakes — Nevzat Yıldırım and Kerem Taştan; 135 (12), 1052-62 (2009).

Developing Flow Region and Pressure Fluctuations on Steeply Sloping Stepped Spillways — António Amador, Martí Sánchez-Juny, and Josep Dolz; 135 (12), 1092-100 (2009).

Air-water interactions

Influence of Plunge Pool Geometry on High-Velocity Jet Impact Pressures and Pressure Propagation inside Fissured Rock Media — Pedro A. Manso, Erik F. R. Bollaert, and Anton J. Schleiss; 135 (10), 783-92 (2009).

Analytical techniques

Analytical Solutions for Open-Channel Temperature Response to Unsteady Thermal Discharge and Boundary Heating — H. S. Tang and T. R. Keen; 135 (4), 327-32 (2009).

Analytical Solutions for Constant-Flux and Constant-Head Tests at a Finite-Diameter Well in a Wedge-Shaped Aquifer — Yen-Ju Chen, Hund-Der Yeh, and Shaw-Yang Yang; 135 (4), 333-7 (2009).

Anisotropy

Reynolds Stress Anisotropy in Open-Channel Flow — Vesselina Roussinova, Ram Balachandar, and Nihar Biswas; 135 (10), 812-24 (2009).

Aquifers

Analytical Solutions for Constant-Flux and Constant-Head Tests at a Finite-Diameter Well in a Wedge-Shaped Aquifer — Yen-Ju Chen, Hund-Der Yeh, and Shaw-Yang Yang; 135 (4), 333-7 (2009).

Attenuation

Volume-Conservative Nonlinear Flood Routing — Roland K. Price; 135 (10), 838-45 (2009).

Australia

Lagrangian Modeling of the Dynamics of River and Floodplain Flow — Bishnu H. Devkota and Jörg Imberger; 135 (10), 771-82 (2009).

Basins

Flow Field in a Rectangular Basin with a Line Inlet and a Circular Outlet — Yaser Shammaa, David Z. Zhu, and Nallamuthu Rajaratnam; 135 (10), 857-64 (2009).

Bayesian analysis

Bayesian Updating of Parameters for a Sediment Entrainment Model via Markov Chain Monte Carlo — Fu-Chun Wu and C. C. Chen; 135 (1), 22-37 (2009).

Bed loads

Concentration Profiles and Solids Transport above Stationary Deposit in Enclosed Conduit — Václav Matoušek; 135 (12), 1101-6 (2009).

Bed materials

Maximum Level and Time to Peak of Dam-Break Waves on Mobile Horizontal Bed — João G. A. B. Leal, Rui M. L. Ferreira, and António H. Cardoso; 135 (11), 995-9 (2009).

Bed movement

Concentration Profiles and Solids Transport above Stationary Deposit in Enclosed Conduit — Václav Matoušek; 135 (12), 1101-6 (2009).

Bed roughness

New Solution of Classical Hydraulic Jump — Francesco Giuseppe Carollo, Vito Ferro, and Vincenzo Pampalone; 135 (6), 527-31 (2009).

Bedforms

Turbulent Stresses and Secondary Currents in a Tidal-Forced Channel with Significant Curvature and Asymmetric Bed Forms — Derek A. Fong, Stephen G. Monismith, Mark T. Stacey, and Jon R. Burau; 135 (3), 198-208 (2009).

Investigation on the Dimensions and Shape of a Submerged Vane for Sediment Management in Alluvial Channels — Huei-Tau Ouyang; 135 (3), 209-17 (2009).

Rapid Profiling of an Evolving Bed Form Using Planar Laser Sheet Illumination — B. D. Younkin and D. F. Hill; 135 (10), 852-6 (2009).

Bends, hydraulic

Reduction of Bend Scour by an Outer Bank Footing: Flow Field and Turbulence — M. Roca, K. Blanckaert, and J. P. Martín-Vide; 135 (5), 361-8 (2009).

Best Management Practice

Assessment of Hydrodynamic Separators for Storm-Water Treatment — Matthew A. Wilson, Omid Mohseni, John S. Gulliver, Raymond M. Hozalski, and Heinz G. Stefan; 135 (5), 383-92 (2009).

Bifurcations

Elemental T and Y Shapes of Tree Networks of Ducts with Various Cross-Sectional Shapes — W. Wechsatol, S. Lorente, A. Bejan, and J. C. Ordonez; 135 (2), 132-9 (2009).

Boulders

Energy Dissipation on Block Ramps with Staggered Boulders — Zulfequar Ahmad, Nadimetla M. Petappa, and Bernhard Westrich; 135 (6), 522-6 (2009).

Boundary layers

Modeling of a Rough-Wall Oscillatory Boundary Layer Using Two-Equation Turbulence Models — Ahmad Sana, Abdul-Razzaq Ghumman, and Hitoshi Tanaka; 135 (1), 60-5 (2009).

Boundary shear

Turbulent Stresses and Secondary Currents in a Tidal-Forced Channel with Significant Curvature and Asymmetric Bed Forms — Derek A. Fong, Stephen G. Monismith, Mark T. Stacey, and Jon R. Burau; 135 (3), 198-208 (2009).

Boussinesq equation

Density Effect on Round Turbulent Hypersaline Fountain — Raouf E. Baddour and Hua Zhang; 135 (1), 57-9 (2009).

Bridge abutments

Constriction Effects in Clear-Water Scour at Abutments — Francesco Ballio, Anna Teruzzi, and Alessio Radice; 135 (2), 140-5 (2009).

Protecting Vertical-Wall Abutments with Riprap Mattresses — António H. Cardoso and Cristina M. S. Fael; 135 (6), 457-65 (2009).

Bridge failure

Hydrodynamic Investigation of Coastal Bridge Collapse during Hurricane Katrina — Qin Chen, Lixia Wang, and Haihong Zhao; 135 (3), 175-86 (2009).

Bridges

Control of Scour at Bridge Piers by a Downstream

Bed Sill — Carmelo Grimaldi, Roberto Gaudio, Francesco Calomino, and António H. Cardoso; 135 (1), 13-21 (2009).

Maximum Local Scour Depth at Bridge Piers under Unsteady Flow — Jihn-Sung Lai, Wen-Yi Chang, and Chin-Lien Yen; 135 (7), 609-14 (2009).

Effect of Sediment Size Scaling on Physical Modeling of Bridge Pier Scour — Seung Oh Lee and Terry W. Sturm; 135 (10), 793-802 (2009).

Detached Eddy Simulation Investigation of Turbulence at a Circular Pier with Scour Hole — G. Kirkil, G. Constantinescu, and R. Ettema; 135 (11), 888-901 (2009).

Bridges, piers

Countermeasures against Local Scouring at Bridge Piers: Slot and Combined System of Slot and Bed Sill — Carmelo Grimaldi, Roberto Gaudio, Francesco Calomino, and António H. Cardoso; 135 (5), 425-31 (2009).

Bubbles

Measurement of Behavioral Properties of Entrained Ambient Water in a Stratified Bubble Plume — Dong-Guan Seol, Duncan B. Bryant, and Scott A. Socolofsky; 135 (11), 983-8 (2009).

Bubble Movement in Downward-Inclined Pipes — Stephan Glauser and Martin Wickenhäuser; 135 (11), 1012-5 (2009).

Canals

Robust Fractional-Order *PI* Controller Implemented on a Laboratory Hydraulic Canal — V. Feliu-Batlle, R. Rivas-Perez, L. Sanchez-Rodriguez, and M. A. Ruiz-Torija; 135 (4), 271-82 (2009).

Case studies

Case Study: Design of Flood Control Systems on the Vara River by Numerical and Physical Modeling — Annunziato Siviglia, Alessandro Stocchino, and Marco Colombini; 135 (12), 1063-72 (2009).

Cavitation

Developing Flow Region and Pressure Fluctuations on Steeply Sloping Stepped Spillways — António Amador, Martí Sánchez-Juny, and Josep Dolz; 135 (12), 1092-100 (2009).

Channel bends

Effects of Vanes and W-Weir on Sediment Transport in Meandering Channels — Faruk Bhuiyan, Richard D. Hey, and Peter R. Wormleaton; 135 (5), 339-49 (2009).

Channel flow

Three-Dimensional Modeling of Density Current in a Straight Channel — Bahar Firoozabadi, Hossein Afshin, and Ehsan Aram; 135 (5), 393-402 (2009).

Channel morphology

Unifying Criterion for the Velocity Reversal Hypothesis in Gravel-Bed Rivers — Diego Caamaño, Peter Goodwin, John M. Buffington, Jim C. P. Liou, and Steve Daley-Laursen; 135 (1), 66-70 (2009).

Channels

Investigation on the Dimensions and Shape of a Submerged Vane for Sediment Management in Alluvial Channels — Huei-Tau Ouyang; 135 (3), 209-17 (2009).

Case Study: Equivalent Widths of the Middle Rio Grande, New Mexico — Claudia Leon, Pierre Y. Julien, and Drew C. Baird; 135 (4), 306-15 (2009).

China

Estimating Nonpoint Source Pollution in the Upper Yangtze River Using the Export Coefficient Model, Remote Sensing, and Geographical Information System — Rui-min Liu, Zhi-feng Yang, Zhen-yao Shen, Shaw L. Yu, Xiao-wen Ding, Xing Wu, and Fang Liu; 135 (9), 698-704 (2009).

Ecological and Hydraulic Studies of Step-Pool Systems — Zhao-yin Wang, Charles Steven Melching, Xue-hua Duan, and Guo-an Yu; 135 (9), 705-17 (2009).

Channel Degradation Downstream from the Three Gorges Project and Its Impacts on Flood Level — Yitian Li, Zhaohua Sun, Yun Liu, and Jinyun Deng; 135 (9), 718-28 (2009).

Numerical Model for Sediment Transport and Bed Degradation in the Yangtze River Channel Downstream of Three Gorges Reservoir — Gang Zhou, Hong Wang, Xuejun Shao, and Dongdong Jia; 135 (9), 729-40 (2009).

Formation and Evolution of the Jiuduansha Shoal over the Past 50 Years — Xiaoping Xie, Zhaoyin Wang, and Charles S. Melching; 135 (9), 741-54 (2009).

Coastal environment

Modeling of a Rough-Wall Oscillatory Boundary Layer Using Two-Equation Turbulence Models — Ahmad Sana, Abdul-Razzaq Ghumman, and Hitoshi Tanaka; 135 (1), 60-5 (2009).

Coefficients

Estimating Nonpoint Source Pollution in the Upper Yangtze River Using the Export Coefficient Model, Remote Sensing, and Geographical Information System — Rui-min Liu, Zhi-feng Yang, Zhen-yao Shen, Shaw L. Yu, Xiao-wen Ding, Xing Wu, and Fang Liu; 135 (9), 698-704 (2009).

Bubble Movement in Downward-Inclined Pipes — Stephan Glauser and Martin Wickenhäuser; 135 (11), 1012-5 (2009).

Calculation of Contraction Coefficient under Sluice Gates and Application to Discharge Measurement — Gilles Belaud, Ludovic Cassan, and Jean-Pierre Baume; 135 (12), 1086-91 (2009).

Cohesionless soils

Two-Dimensional Nonequilibrium Noncohesive and Cohesive Sediment Transport Model — M. C. Hung, T. Y. Hsieh, C. H. Wu, and J. C. Yang; 135 (5), 369-82 (2009).

Computation

Systematic Surge Protection for Worst-Case Transient Loadings in Water Distribution Systems — Bong Seog Jung and Bryan W. Karney; 135 (3), 218-23 (2009).

Computational fluid dynamics technique

URANS Computations of Shallow Grid Turbulence — Ichiro Kimura, Wim S. J. Uijttewaal, Takashi Hosoda, and Md. Shahjahan Ali; 135 (2), 118-31 (2009).

Investigation of Two Elemental Error Sources in Boat-Mounted Acoustic Doppler Current Profiler Measurements by Large Eddy Simulations — T. Tokyay, G. Constantinescu, and Juan A. Gonzalez-Castro; 135 (11), 875-87 (2009).

Computer models

Modeling the Evolution of Incised Streams. III: Model Application — Eddy J. Langendoen, Robert R. Wells, Robert E. Thomas, Andrew Simon, and Ronald L. Bingner; 135 (6), 476-86 (2009).

Computer programming

Modeling the Behavior of Flow Regulating Devices in Water Distribution Systems Using Constrained Nonlinear Programming — Jochen W. Deuerlein, Angus R. Simpson, and Stephan Dempe; 135 (11), 970-82 (2009).

Contraction

Hydraulic Jumps in an Inclined Rectangular Chute Contraction — Chyan-Deng Jan and Chia-Jung Chang; 135 (11), 949-58 (2009).

Calculation of Contraction Coefficient under Sluice Gates and Application to Discharge Measurement — Gilles Belaud, Ludovic Cassan, and Jean-Pierre Baume; 135 (12), 1086-91 (2009).

Coupling

Hydrodynamic Investigation of Coastal Bridge Collapse during Hurricane Katrina — Qin Chen, Lixia Wang, and Haihong Zhao; 135 (3), 175-86 (2009).

Critical flow

Bridge Rail Rating Curves and Submergence Characteristics — Joshua B. Klenzendorf and Randall J. Charbeneau; 135 (2), 88-95 (2009).

Cross sections

Optimal Cross-Sectional Spacing in Preissmann Scheme 1D Hydrodynamic Models — A. Castellarin, G. Di Baldassarre, P. D. Bates, and A. Brath; 135 (2), 96-105 (2009).

Elemental T and Y Shapes of Tree Networks of Ducts with Various Cross-Sectional Shapes — W. Wechsatol, S. Lorente, A. Bejan, and J. C. Ordonez; 135 (2), 132-9 (2009).

Uniform Flow of Modified Bingham Fluids in Narrow Cross Sections — Alessandro Cantelli; 135 (8), 640-50 (2009).

Dam construction

Channel Degradation Downstream from the Three Gorges Project and Its Impacts on Flood Level — Yitian Li, Zhaohua Sun, Yun Liu, and Jinyun Deng; 135 (9), 718-28 (2009).

Dams

Skimming Flow in the Nonaerated Region of Stepped Spillways over Embankment Dams — Inês Meireles and Jorge Matos; 135 (8), 685-9 (2009).

Maximum Level and Time to Peak of Dam-Break Waves on Mobile Horizontal Bed — João G. A. B. Leal, Rui M. L. Ferreira, and António H. Cardoso; 135 (11), 995-9 (2009).

Developing Flow Region and Pressure Fluctuations on Steeply Sloping Stepped Spillways — António Amador, Martí Sánchez-Juny, and Josep Dolz; 135 (12), 1092-100 (2009).

Debris

Uniform Flow of Modified Bingham Fluids in Narrow Cross Sections — Alessandro Cantelli; 135 (8), 640-50 (2009).

Degradation

Channel Degradation Downstream from the Three Gorges Project and Its Impacts on Flood Level — Yitian Li, Zhaohua Sun, Yun Liu, and Jinyun

Deng; 135 (9), 718-28 (2009).

Density currents

Density Effect on Round Turbulent Hypersaline Fountain — Raouf E. Baddour and Hua Zhang; 135 (1), 57-9 (2009).

Three-Dimensional Modeling of Density Current in a Straight Channel — Bahar Firoozabadi, Hossein Afshin, and Ehsan Aram; 135 (5), 393-402 (2009).

Desalination

Density Effect on Round Turbulent Hypersaline Fountain — Raouf E. Baddour and Hua Zhang; 135 (1), 57-9 (2009).

Experimental Studies on Vertical Dense Jets in a Flowing Current — Endam Gungor and Philip J. W. Roberts; 135 (11), 935-48 (2009).

Design

Case Study: Design of Flood Control Systems on the Vara River by Numerical and Physical Modeling — Annunziato Siviglia, Alessandro Stocchino, and Marco Colombini; 135 (12), 1063-72 (2009).

Detention basins

Design of Street Sump Inlet — James C. Y. Guo, Ken A. MacKenzie, and Amanullah Mommandi; 135 (11), 1000-4 (2009).

Dikes

Mean Flow and Turbulence around a Laboratory Spur Dike — Jennifer G. Duan; 135 (10), 803-11 (2009).

Dilution

Case Study: Intermediate Field Mixing for a Bank Discharge in a Natural River — Karen E. Dow, Peter M. Steffler, and David Z. Zhu; 135 (1), 1-12 (2009).

Experimental Studies on Vertical Dense Jets in a Flowing Current — Endam Gungor and Philip J. W. Roberts; 135 (11), 935-48 (2009).

Dimensional analysis

On the Quantification of the Bed Development Time of Alluvial Meandering Streams — Andrew D. Binns and Ana Maria Ferreira da Silva; 135 (5), 350-60 (2009).

Assessment of Hydrodynamic Separators for Storm-Water Treatment — Matthew A. Wilson, Omid Mohseni, John S. Gulliver, Raymond M. Hozalski, and Heinz G. Stefan; 135 (5), 383-92 (2009).

Generalized Flow Rating Equations at Prototype Gated Spillways — Matahel Ansar and Zhiming Chen; 135 (7), 602-8 (2009).

Discharge measurement

Calculation of Contraction Coefficient under Sluice Gates and Application to Discharge Measurement — Gilles Belaud, Ludovic Cassan, and Jean-Pierre Baume; 135 (12), 1086-91 (2009).

Discrete element method

Modeling Floating Objects at River Structures — Richard L. Stockstill, Steven F. Daly, and Mark A. Hopkins; 135 (5), 403-14 (2009).

Dispersion

Depth-Dependent Dispersion Coefficient for Modeling of Vertical Solute Exchange in a Lake Bed under Surface Waves — Qin Qian, Jeffrey J. Clark, Vaughan R. Voller, and Heinz G. Stefan; 135 (3), 187-97 (2009).

Drag

Turbulent Stresses and Secondary Currents in a Tidal-Forced Channel with Significant Curvature and Asymmetric Bed Forms — Derek A. Fong, Stephen G. Monismith, Mark T. Stacey, and Jon R. Burau; 135 (3), 198-208 (2009).

Test of a Method to Calculate Near-Bank Velocity and Boundary Shear Stress — Jason W. Kean, Roger A. Kuhnle, J. Dungan Smith, Carlos V. Alonso, and Eddy J. Langendoen; 135 (7), 588-601 (2009).

Bubble Movement in Downward-Inclined Pipes — Stephan Glauser and Martin Wickenhäuser; 135 (11), 1012-5 (2009).

Drainage

Hydraulics of Tangential Vortex Intake for Urban Drainage — Daeyoung Yu and Joseph H. W. Lee; 135 (3), 164-74 (2009).

Drop structures

Hydraulics of Tangential Vortex Intake for Urban Drainage — Daeyoung Yu and Joseph H. W. Lee; 135 (3), 164-74 (2009).

Scouring at Bed Sills as a Response to Flash Floods — Matteo Tregnaghi, Andrea Marion, and Stephen Coleman; 135 (6), 466-75 (2009).

Dye

Mass Transport in Shallow Turbulent Wake Flow by Planar Concentration Analysis Technique — Carl F. v. Carmer, Andreas C. Rummel, and Gerhard H. Jirka; 135 (4), 257-70 (2009).

Dynamic pressure

Influence of Plunge Pool Geometry on High-Velocity Jet Impact Pressures and Pressure Propagation inside Fissured Rock Media — Pedro A. Manso, Erik F. R. Bollaert, and Anton J. Schleiss; 135 (10), 783-92 (2009).

Ecology

Ecological and Hydraulic Studies of Step-Pool Systems — Zhao-yin Wang, Charles Steven Melching, Xue-hua Duan, and Guo-an Yu; 135 (9), 705-17 (2009).

Eddies

Detached Eddy Simulation Investigation of Turbulence at a Circular Pier with Scour Hole — G. Kirkil, G. Constantinescu, and R. Ettema; 135 (11), 888-901 (2009).

Eddy simulation

Turbulent Stresses at the Bottom Surface near an Abutment: Laboratory-Scale Numerical Experiment — Anna Teruzzi, Francesco Ballio, and Vincenzo Armenio; 135 (2), 106-17 (2009).

Efficiency

Investigation on the Dimensions and Shape of a Submerged Vane for Sediment Management in Alluvial Channels — Huei-Tau Ouyang; 135 (3), 209-17 (2009).

Embankment

Skimming Flow in the Nonaerated Region of Stepped Spillways over Embankment Dams — Inês Meireles and Jorge Matos; 135 (8), 685-9 (2009).

Energy

Energy Dissipation on Block Ramps with Staggered Boulders — Zulfequar Ahmad, Nadimetla M. Petappa, and Bernhard Westrich; 135 (6), 522-6 (2009).

New Solution of Classical Hydraulic Jump — Francesco Giuseppe Carollo, Vito Ferro, and Vincenzo Pampalone; 135 (6), 527-31 (2009).

Energy consumption

Resistance Characteristics of Surface Aerators — Achanta Ramakrishna Rao and Bimlesh Kumar; 135 (1), 38-44 (2009).

Energy losses

Skimming Flow in the Nonaerated Region of Stepped Spillways over Embankment Dams — Inês Meireles and Jorge Matos; 135 (8), 685-9 (2009).

Hydraulic Jumps in an Inclined Rectangular Chute Contraction — Chyan-Deng Jan and Chia-Jung Chang; 135 (11), 949-58 (2009).

Entrainment

Bayesian Updating of Parameters for a Sediment Entrainment Model via Markov Chain Monte Carlo — Fu-Chun Wu and C. C. Chen; 135 (1), 22-37 (2009).

Measurement of Behavioral Properties of Entrained Ambient Water in a Stratified Bubble Plume — Dong-Guan Seol, Duncan B. Bryant, and Scott A. Socolofsky; 135 (11), 983-8 (2009).

Equilibrium

On the Quantification of the Bed Development Time of Alluvial Meandering Streams — Andrew D. Binns and Ana Maria Ferreira da Silva; 135 (5), 350-60 (2009).

Erosion

Constriction Effects in Clear-Water Scour at Abutments — Francesco Ballio, Anna Teruzzi, and Alessio Radice; 135 (2), 140-5 (2009).

Riprap Stability: Transverse and Longitudinal versus Continuous Protections — Gustavo Adolfo M. de Almeida and Juan P. Martín-Vide; 135 (6), 447-56 (2009).

Scouring at Bed Sills as a Response to Flash Floods — Matteo Tregnaghi, Andrea Marion, and Stephen Coleman; 135 (6), 466-75 (2009).

3D Numerical Simulation for Water Flows and Sediment Deposition in Dam Areas of the Three Gorges Project — Yong-jun Lu and Zhao-yin Wang; 135 (9), 755-69 (2009).

Integrated Two-Dimensional Surface and Three-Dimensional Subsurface Contaminant Transport Model Considering Soil Erosion and Sorption — Zhiguo He, Weiming Wu, and Sam S. Y. Wang; 135 (12), 1028-40 (2009).

Errors

Investigation of Two Elemental Error Sources in Boat-Mounted Acoustic Doppler Current Profiler Measurements by Large Eddy Simulations — T. Tokyay, G. Constantinescu, and Juan A. Gonzalez-Castro; 135 (11), 875-87 (2009).

Estimation

Real-Time Demand Estimation and Confidence Limit Analysis for Water Distribution Systems — Doosun Kang and Kevin Lansey; 135 (10), 825-37 (2009).

Estuaries

Formation and Evolution of the Jiuduansha Shoal over the Past 50 Years — Xiaoping Xie, Zhaoyin Wang, and Charles S. Melching; 135 (9), 741-54 (2009).

Evolution, development

On the Quantification of the Bed Development Time of Alluvial Meandering Streams — Andrew D. Binns and Ana Maria Ferreira da Silva;

135 (5), 350-60 (2009).

Experimentation

Control of Scour at Bridge Piers by a Downstream Bed Sill — Carmelo Grimaldi, Roberto Gaudio, Francesco Calomino, and António H. Cardoso; 135 (1), 13-21 (2009).

Protecting Vertical-Wall Abutments with Riprap Mattresses — António H. Cardoso and Cristina M. S. Fael; 135 (6), 457-65 (2009).

Finite elements

Modeling Floating Objects at River Structures — Richard L. Stockstill, Steven F. Daly, and Mark A. Hopkins; 135 (5), 403-14 (2009).

Fish management

Particle Image Velocimetry Study of Flow near Trashrack Models — Jonathan M. Tsikata, Mark F. Tachie, and Chris Katopodis; 135 (8), 671-84 (2009).

Flash floods

Scouring at Bed Sills as a Response to Flash Floods — Matteo Tregnaghi, Andrea Marion, and Stephen Coleman; 135 (6), 466-75 (2009).

Floating structures

Modeling Floating Objects at River Structures — Richard L. Stockstill, Steven F. Daly, and Mark A. Hopkins; 135 (5), 403-14 (2009).

Flood plains

Bridge Rail Rating Curves and Submergence Characteristics — Joshua B. Klenzendorf and Randall J. Charbeneau; 135 (2), 88-95 (2009).

Lagrangian Modeling of the Dynamics of River and Floodplain Flow — Bishnu H. Devkota and Jörg Imberger; 135 (10), 771-82 (2009).

Flood routing

Volume-Conservative Nonlinear Flood Routing — Roland K. Price; 135 (10), 838-45 (2009).

Floods

Optimal Cross-Sectional Spacing in Preissmann Scheme 1D Hydrodynamic Models — A. Castellarin, G. Di Baldassarre, P. D. Bates, and A. Brath; 135 (2), 96-105 (2009).

Comparison of 1D/1D and 1D/2D Coupled (Sewer/Surface) Hydraulic Models for Urban Flood Simulation — Jorge Leandro, Albert S. Chen, Slobodan Djordjević, and Dragan A. Savić; 135 (6), 495-504 (2009).

Case Study: Hydraulic Modeling of Runoff Processes in Ghanaian Inland Valleys — Koichi Unami, Toshihiko Kawachi, Gordana Kranjac-Berisavljevic, Felix Kofi Abagale, Shigeya Maeda, and Junichiro Takeuchi; 135 (7), 539-53 (2009).

Channel Degradation Downstream from the Three Gorges Project and Its Impacts on Flood Level — Yitian Li, Zhaohua Sun, Yun Liu, and Jinyun Deng; 135 (9), 718-28 (2009).

Case Study: Design of Flood Control Systems on the Vara River by Numerical and Physical Modeling — Annunziato Siviglia, Alessandro Stocchino, and Marco Colombini; 135 (12), 1063-72 (2009).

Florida

Generalized Flow Rating Equations at Prototype Gated Spillways — Matahel Ansar and Zhiming Chen; 135 (7), 602-8 (2009).

Flow

Combined Flow over Weir and under Gate — Jamal M. V. Samani and Mehdi Mazaheri; 135 (3), 224-7 (2009).

Flow control

Modeling the Behavior of Flow Regulating Devices in Water Distribution Systems Using Constrained Nonlinear Programming — Jochen W. Deuerlein, Angus R. Simpson, and Stephan Dempe; 135 (11), 970-82 (2009).

Flow measurement

Mass Transport in Shallow Turbulent Wake Flow by Planar Concentration Analysis Technique — Carl F. v. Carmer, Andreas C. Rummel, and Gerhard H. Jirka; 135 (4), 257-70 (2009).

Experimental Observations of Flow and Bed Processes in Large-Amplitude Meandering Flume — Donatella Termini; 135 (7), 575-87 (2009).

Investigation of Two Elemental Error Sources in Boat-Mounted Acoustic Doppler Current Profiler Measurements by Large Eddy Simulations — T. Tokyay, G. Constantinescu, and Juan A. Gonzalez-Castro; 135 (11), 875-87 (2009).

Discharge Characteristics of Weirs of Finite Crest Length — Amir Hossein Azimi and N. Rajaratnam; 135 (12), 1081-5 (2009).

Flow rate

Generalized Flow Rating Equations at Prototype Gated Spillways — Matahel Ansar and Zhiming Chen; 135 (7), 602-8 (2009).

Flow resistance

Energy Dissipation on Block Ramps with Staggered Boulders — Zulfequar Ahmad, Nadimetla M. Petappa, and Bernhard Westrich; 135 (6), 522-6 (2009).

Ecological and Hydraulic Studies of Step-Pool Systems — Zhao-yin Wang, Charles Steven Melching, Xue-hua Duan, and Guo-an Yu; 135 (9), 705-17 (2009).

Flumes

Constriction Effects in Clear-Water Scour at Abutments — Francesco Ballio, Anna Teruzzi, and Alessio Radice; 135 (2), 140-5 (2009).

Mean Flow and Turbulence around a Laboratory Spur Dike — Jennifer G. Duan; 135 (10), 803-11 (2009).

Flushing

Using Impellers to Distribute Local Nutrient Loadings in a Stratified Lake: Lake Como, Italy — Sebastián Morillo, Jörg Imberger, Jason P. Antenucci, and Diego Copetti; 135 (7), 564-74 (2009).

Free flow

Calculation of Contraction Coefficient under Sluice Gates and Application to Discharge Measurement — Gilles Belaud, Ludovic Cassan, and Jean-Pierre Baume; 135 (12), 1086-91 (2009).

Free surfaces

Characteristics of a Three-Dimensional Square Jet in the Vicinity of a Free Surface — Girish Sankar, Ram Balachandar, and Rupp Carriveau; 135 (11), 989-94 (2009).

Friction

Local Balance Unsteady Friction Model — Giuseppe Pezzinga; 135 (1), 45-56 (2009).

Friction resistance

Turbulent Stresses and Secondary Currents in a Tidal-Forced Channel with Significant Curvature and Asymmetric Bed Forms — Derek A. Fong, Stephen G. Monismith, Mark T. Stacey, and Jon R. Burau; 135 (3), 198-208 (2009).

Timescale Behavior of the Wall Shear Stress in Unsteady Laminar Pipe Flows — José Abreu and A. Betâmio de Almeida; 135 (5), 415-24 (2009).

Froude number

Resistance Characteristics of Surface Aerators — Achanta Ramakrishna Rao and Bimlesh Kumar; 135 (1), 38-44 (2009).

Local Scour Caused by Submerged Square Jets under Model Ice Cover — Jueyi Sui, M. A. A. Faruque, and Ram Balachandar; 135 (4), 316-9 (2009).

Gates

Combined Flow over Weir and under Gate — Jamal M. V. Samani and Mehdi Mazaheri; 135 (3), 224-7 (2009).

Calculation of Contraction Coefficient under Sluice Gates and Application to Discharge Measurement — Gilles Belaud, Ludovic Cassan, and Jean-Pierre Baume; 135 (12), 1086-91 (2009).

Geographic information systems

Estimating Nonpoint Source Pollution in the Upper Yangtze River Using the Export Coefficient Model, Remote Sensing, and Geographical Information System — Rui-min Liu, Zhi-feng Yang, Zhen-yao Shen, Shaw L. Yu, Xiao-wen Ding, Xing Wu, and Fang Liu; 135 (9), 698-704 (2009).

Geometry

Case Study: Equivalent Widths of the Middle Rio Grande, New Mexico — Claudia Leon, Pierre Y. Julien, and Drew C. Baird; 135 (4), 306-15 (2009).

Modeling the Evolution of Incised Streams. III: Model Application — Eddy J. Langendoen, Robert R. Wells, Robert E. Thomas, Andrew Simon, and Ronald L. Bingner; 135 (6), 476-86 (2009).

Geomorphology

Formation and Evolution of the Jiuduansha Shoal over the Past 50 Years — Xiaoping Xie, Zhaoyin Wang, and Charles S. Melching; 135 (9), 741-54 (2009).

Ghana

Case Study: Hydraulic Modeling of Runoff Processes in Ghanaian Inland Valleys — Koichi Unami, Toshihiko Kawachi, Gordana Kranjac-Berisavljevic, Felix Kofi Abagale, Shigeya Maeda, and Junichiro Takeuchi; 135 (7), 539-53 (2009).

Gravity waves

Three-Dimensional Unsteady RANS Modeling of Discontinuous Gravity Currents in Rectangular Domains — Joongcheol Paik, Afshin Eghbalzadeh, and Fotis Sotiropoulos; 135 (6), 505-21 (2009).

Groundwater management

Analytical Solutions for Constant-Flux and Constant-Head Tests at a Finite-Diameter Well in a Wedge-Shaped Aquifer — Yen-Ju Chen, Hund-Der Yeh, and Shaw-Yang Yang; 135 (4), 333-7 (2009).

Heat transfer

3D Numerical Simulation of Turbulent Buoyant Flow and Heat Transport in a Curved Open

Channel — Xiaobo Chao, Yafei Jia, and Sam S. Y. Wang; 135 (7), 554-63 (2009).

Heterogeneity

Using Impellers to Distribute Local Nutrient Loadings in a Stratified Lake: Lake Como, Italy — Sebastián Morillo, Jörg Imberger, Jason P. Antenucci, and Diego Copetti; 135 (7), 564-74 (2009).

Highways and roads

Physical Modeling of Sheet Flow on Rough Impervious Surfaces — Randall J. Charbeneau, Jaehak Jeong, and Michael E. Barrett; 135 (6), 487-94 (2009).

Hurricanes

Hydrodynamic Investigation of Coastal Bridge Collapse during Hurricane Katrina — Qin Chen, Lixia Wang, and Haihong Zhao; 135 (3), 175-86 (2009).

Hydraulic jets

Influence of Plunge Pool Geometry on High-Velocity Jet Impact Pressures and Pressure Propagation inside Fissured Rock Media — Pedro A. Manso, Erik F. R. Bollaert, and Anton J. Schleiss; 135 (10), 783-92 (2009).

Local Scour Downstream of Positive-Step Stilling Basins — Giuseppe Oliveto and Victor Comuniello; 135 (10), 846-51 (2009).

Rapid Profiling of an Evolving Bed Form Using Planar Laser Sheet Illumination — B. D. Younkin and D. F. Hill; 135 (10), 852-6 (2009).

Characteristics of a Three-Dimensional Square Jet in the Vicinity of a Free Surface — Girish Sankar, Ram Balachandar, and Rupp Carriveau; 135 (11), 989-94 (2009).

Hydraulic jump

Hydraulics of Tangential Vortex Intake for Urban Drainage — Daeyoung Yu and Joseph H. W. Lee; 135 (3), 164-74 (2009).

New Solution of Classical Hydraulic Jump — Francesco Giuseppe Carollo, Vito Ferro, and Vincenzo Pampalone; 135 (6), 527-31 (2009).

Stepped Spillway with Hydraulic Jumps: Application of a Numerical Model to a Scale Model of a Conceptual Prototype — Rita F. Carvalho and Rui Martins; 135 (7), 615-9 (2009).

Local Scour Downstream of Positive-Step Stilling Basins — Giuseppe Oliveto and Victor Comuniello; 135 (10), 846-51 (2009).

Hydraulic Jumps in an Inclined Rectangular Chute Contraction — Chyan-Deng Jan and Chia-Jung Chang; 135 (11), 949-58 (2009).

Hydraulic models

Depth-Dependent Dispersion Coefficient for Modeling of Vertical Solute Exchange in a Lake Bed under Surface Waves — Qin Qian, Jeffrey J. Clark, Vaughan R. Voller, and Heinz G. Stefan; 135 (3), 187-97 (2009).

Combined Flow over Weir and under Gate — Jamal M. V. Samani and Mehdi Mazaheri; 135 (3), 224-7 (2009).

Numerical Oscillations in Pipe-Filling Bore Predictions by Shock-Capturing Models — Jose G. Vasconcelos, Steven J. Wright, and Philip L. Roe; 135 (4), 296-305 (2009).

Physical Modeling of Sheet Flow on Rough Impervious Surfaces — Randall J. Charbeneau, Jaehak Jeong, and Michael E. Barrett; 135 (6), 487-94 (2009).

Comparison of 1D/1D and 1D/2D Coupled (Sewer/Surface) Hydraulic Models for Urban Flood Simulation — Jorge Leandro, Albert S. Chen, Slobodan Djordjević, and Dragan A. Savić; 135 (6), 495-504 (2009).

Case Study: Hydraulic Modeling of Runoff Processes in Ghanaian Inland Valleys — Koichi Unami, Toshihiko Kawachi, Gordana Kranjac-Berisavljevic, Felix Kofi Abagale, Shigeya Maeda, and Junichiro Takeuchi; 135 (7), 539-53 (2009).

Particle Image Velocimetry Study of Flow near Trashrack Models — Jonathan M. Tsikata, Mark F. Tachie, and Chris Katopodis; 135 (8), 671-84 (2009).

Lagrangian Modeling of the Dynamics of River and Floodplain Flow — Bishnu H. Devkota and Jörg Imberger; 135 (10), 771-82 (2009).

Effect of Sediment Size Scaling on Physical Modeling of Bridge Pier Scour — Seung Oh Lee and Terry W. Sturm; 135 (10), 793-802 (2009).

Lagrangian Modeling of Weakly Nonlinear Nonhydrostatic Shallow Water Waves in Open Channels — Bishnu H. Devkota and Jörg Imberger; 135 (11), 926-34 (2009).

Sensitivity Analysis for Hydraulic Models — Jim W. Hall, Shawn A. Boyce, Yueling Wang, Richard J. Dawson, Stefano Tarantola, and Andrea Saltelli; 135 (11), 959-69 (2009).

Modeling the Behavior of Flow Regulating Devices in Water Distribution Systems Using Constrained Nonlinear Programming — Jochen W. Deuerlein, Angus R. Simpson, and Stephan Dempe; 135 (11), 970-82 (2009).

Hydraulic networks

Elemental T and Y Shapes of Tree Networks of Ducts with Various Cross-Sectional Shapes — W. Wechsatol, S. Lorente, A. Bejan, and J. C. Ordonez; 135 (2), 132-9 (2009).

Hydraulic roughness

Test of a Method to Calculate Near-Bank Velocity and Boundary Shear Stress — Jason W. Kean, Roger A. Kuhnle, J. Dungan Smith, Carlos V. Alonso, and Eddy J. Langendoen; 135 (7), 588-601 (2009).

Hydraulic structures

Effects of Vanes and W-Weir on Sediment Transport in Meandering Channels — Faruk Bhuiyan, Richard D. Hey, and Peter R. Wormleaton; 135 (5), 339-49 (2009).

Influence of Plunge Pool Geometry on High-Velocity Jet Impact Pressures and Pressure Propagation inside Fissured Rock Media — Pedro A. Manso, Erik F. R. Bollaert, and Anton J. Schleiss; 135 (10), 783-92 (2009).

Calculation of Contraction Coefficient under Sluice Gates and Application to Discharge Measurement — Gilles Belaud, Ludovic Cassan, and Jean-Pierre Baume; 135 (12), 1086-91 (2009).

Hydraulics

Case Study: Intermediate Field Mixing for a Bank Discharge in a Natural River — Karen E. Dow, Peter M. Steffler, and David Z. Zhu; 135 (1), 1-12 (2009).

Bridge Rail Rating Curves and Submergence Characteristics — Joshua B. Klenzendorf and Randall J. Charbeneau; 135 (2), 88-95 (2009).

Robust Fractional-Order *PI* Controller Implemented on a Laboratory Hydraulic Canal — V. Feliu-Batlle, R. Rivas-Perez, L. Sanchez-Rodriguez, and M. A. Ruiz-Torija; 135 (4), 271-82 (2009).

Case Study: Equivalent Widths of the Middle Rio Grande, New Mexico — Claudia Leon, Pierre Y. Julien, and Drew C. Baird; 135 (4), 306-15 (2009).

Use of the Lorenz Curve to Quantify Statistical Nonuniformity of Sediment Transport Rate — Alessio Radice; 135 (4), 320-6 (2009).

Numerical Study of Flow Affected by Bendway Weirs in Victoria Bendway, the Mississippi River — Y. Jia, S. Scott, Y. Xu, and S. S. Y. Wang; 135 (11), 902-16 (2009).

Design of Street Sump Inlet — James C. Y. Guo, Ken A. MacKenzie, and Amanullah Mommandi; 135 (11), 1000-4 (2009).

Hydrodynamic pressure

Developing Flow Region and Pressure Fluctuations on Steeply Sloping Stepped Spillways — António Amador, Martí Sánchez-Juny, and Josep Dolz; 135 (12), 1092-100 (2009).

Hydrodynamics

Turbulent Stresses and Secondary Currents in a Tidal-Forced Channel with Significant Curvature and Asymmetric Bed Forms — Derek A. Fong, Stephen G. Monismith, Mark T. Stacey, and Jon R. Burau; 135 (3), 198-208 (2009).

Case Study: Three-Dimensional Hydrodynamic Model of a Power Plant Thermal Discharge — Scott A. Lowe, Fred Schuepfer, and Dennis J. Dunning; 135 (4), 247-56 (2009).

WAF Method and Splitting Procedure for Simulating Hydro- and Thermal-Peaking Waves in Open-Channel Flows — Annunziato Siviglia and Eleuterio F. Toro; 135 (8), 651-62 (2009).

Hydrographs

Volume-Conservative Nonlinear Flood Routing — Roland K. Price; 135 (10), 838-45 (2009).

Ice

Local Scour Caused by Submerged Square Jets under Model Ice Cover — Jueyi Sui, M. A. A. Faruque, and Ram Balachandar; 135 (4), 316-9 (2009).

Infiltration

Integrated Two-Dimensional Surface and Three-Dimensional Subsurface Contaminant Transport Model Considering Soil Erosion and Sorption — Zhiguo He, Weiming Wu, and Sam S. Y. Wang; 135 (12), 1028-40 (2009).

Storm-Water Infiltration and Focused Recharge Modeling with Finite-Volume Two-Dimensional Richards Equation: Application to an Experimental Rain Garden — Jazmín E. Aravena and Alejandro Dussaillant; 135 (12), 1073-80 (2009).

Inlets, waterways

Flow Field in a Rectangular Basin with a Line Inlet and a Circular Outlet — Yaser Shammaa, David Z. Zhu, and Nallamuthu Rajaratnam; 135 (10), 857-64 (2009).

Intake stuctures

Critical Submergence for Multiple Pipe Intakes —

Nevzat Yıldırım and Kerem Taştan; 135 (12), 1052-62 (2009).

Integral equations
Kinetic Energy Approach to Dissolving Axisymmetric Multiphase Plumes — Kristian Etienne Einarsrud and Iver Brevik; 135 (12), 1041-51 (2009).

Integrated systems
Integrated Two-Dimensional Surface and Three-Dimensional Subsurface Contaminant Transport Model Considering Soil Erosion and Sorption — Zhiguo He, Weiming Wu, and Sam S. Y. Wang; 135 (12), 1028-40 (2009).

Italy
Using Impellers to Distribute Local Nutrient Loadings in a Stratified Lake: Lake Como, Italy — Sebastián Morillo, Jörg Imberger, Jason P. Antenucci, and Diego Copetti; 135 (7), 564-74 (2009).

Case Study: Design of Flood Control Systems on the Vara River by Numerical and Physical Modeling — Annunziato Siviglia, Alessandro Stocchino, and Marco Colombini; 135 (12), 1063-72 (2009).

Jets, fluid
Local Scour Caused by Submerged Square Jets under Model Ice Cover — Jueyi Sui, M. A. A. Faruque, and Ram Balachandar; 135 (4), 316-9 (2009).

Experimental Studies on Vertical Dense Jets in a Flowing Current — Endam Gungor and Philip J. W. Roberts; 135 (11), 935-48 (2009).

Kinematic wave theory
Volume-Conservative Nonlinear Flood Routing — Roland K. Price; 135 (10), 838-45 (2009).

Kinetics
Kinetic Energy Approach to Dissolving Axisymmetric Multiphase Plumes — Kristian Etienne Einarsrud and Iver Brevik; 135 (12), 1041-51 (2009).

Laboratories
Robust Fractional-Order *PI* Controller Implemented on a Laboratory Hydraulic Canal — V. Feliu-Batlle, R. Rivas-Perez, L. Sanchez-Rodriguez, and M. A. Ruiz-Torija; 135 (4), 271-82 (2009).

Laboratory tests
On the Quantification of the Bed Development Time of Alluvial Meandering Streams — Andrew D. Binns and Ana Maria Ferreira da Silva; 135 (5), 350-60 (2009).

Mean Flow and Turbulence around a Laboratory Spur Dike — Jennifer G. Duan; 135 (10), 803-11 (2009).

Lagrangian functions
Lagrangian Modeling of Weakly Nonlinear Nonhydrostatic Shallow Water Waves in Open Channels — Bishnu H. Devkota and Jörg Imberger; 135 (11), 926-34 (2009).

Lakes
Depth-Dependent Dispersion Coefficient for Modeling of Vertical Solute Exchange in a Lake Bed under Surface Waves — Qin Qian, Jeffrey J. Clark, Vaughan R. Voller, and Heinz G. Stefan; 135 (3), 187-97 (2009).

Using Impellers to Distribute Local Nutrient Loadings in a Stratified Lake: Lake Como, Italy — Sebastián Morillo, Jörg Imberger, Jason P. Antenucci, and Diego Copetti; 135 (7), 564-74 (2009).

Laminar flow
Timescale Behavior of the Wall Shear Stress in Unsteady Laminar Pipe Flows — José Abreu and A. Betâmio de Almeida; 135 (5), 415-24 (2009).

Leakage
Leaks and Water Use Representation in Water Distribution System Models: Finding a Working Equivalence — Andrew F. Colombo and Bryan W. Karney; 135 (3), 234-9 (2009).

Wavelet-Galerkin Solution to the Water Hammer Equations — Ahmed M. Abdel Sattar, John R. Dickerson, and M. Hanif Chaudhry; 135 (4), 283-95 (2009).

Least squares method
Real-Time Demand Estimation and Confidence Limit Analysis for Water Distribution Systems — Doosun Kang and Kevin Lansey; 135 (10), 825-37 (2009).

Limit analysis
Real-Time Demand Estimation and Confidence Limit Analysis for Water Distribution Systems — Doosun Kang and Kevin Lansey; 135 (10), 825-37 (2009).

Louisiana
Hydrodynamic Investigation of Coastal Bridge Collapse during Hurricane Katrina — Qin Chen, Lixia Wang, and Haihong Zhao; 135 (3), 175-86 (2009).

Lysimeters
Storm-Water Infiltration and Focused Recharge Modeling with Finite-Volume Two-Dimensional Richards Equation: Application to an Experimental Rain Garden — Jazmín E. Aravena and Alejandro Dussaillant; 135 (12), 1073-80 (2009).

Markov chains
Bayesian Updating of Parameters for a Sediment Entrainment Model via Markov Chain Monte Carlo — Fu-Chun Wu and C. C. Chen; 135 (1), 22-37 (2009).

Mass transfer
Depth-Dependent Dispersion Coefficient for Modeling of Vertical Solute Exchange in a Lake Bed under Surface Waves — Qin Qian, Jeffrey J. Clark, Vaughan R. Voller, and Heinz G. Stefan; 135 (3), 187-97 (2009).

Mass transport
Mass Transport in Shallow Turbulent Wake Flow by Planar Concentration Analysis Technique — Carl F. v. Carmer, Andreas C. Rummel, and Gerhard H. Jirka; 135 (4), 257-70 (2009).

Mathematical models
Robust Fractional-Order *PI* Controller Implemented on a Laboratory Hydraulic Canal — V. Feliu-Batlle, R. Rivas-Perez, L. Sanchez-Rodriguez, and M. A. Ruiz-Torija; 135 (4), 271-82 (2009).

Three-Dimensional Modeling of Density Current in a Straight Channel — Bahar Firoozabadi, Hossein Afshin, and Ehsan Aram; 135 (5), 393-402 (2009).

Modeling Floating Objects at River Structures — Richard L. Stocksill, Steven F. Daly, and Mark A. Hopkins; 135 (5), 403-14 (2009).

Observation and Simulation of Surface Waves in Two Water Supply Reservoirs — Emmet M. Owens; 135 (8), 663-70 (2009).

3D Numerical Simulation for Water Flows and Sediment Deposition in Dam Areas of the Three Gorges Project — Yong-jun Lu and Zhao-yin Wang; 135 (9), 755-69 (2009).

Meandering streams
On the Quantification of the Bed Development Time of Alluvial Meandering Streams — Andrew D. Binns and Ana Maria Ferreira da Silva; 135 (5), 350-60 (2009).

Experimental Observations of Flow and Bed Processes in Large-Amplitude Meandering Flume — Donatella Termini; 135 (7), 575-87 (2009).

Maximum Migration Distance of Meander Channel in Sand Using Hyperbolic Function Approach — Po-Hung Yeh, Namgyu Park, Kuang-An Chang, Hamn-Ching Chen, and Jean-Louis Briaud; 135 (8), 629-39 (2009).

Measurement
Countermeasures against Local Scouring at Bridge Piers: Slot and Combined System of Slot and Bed Sill — Carmelo Grimaldi, Roberto Gaudio, Francesco Calomino, and António H. Cardoso; 135 (5), 425-31 (2009).

Flow Field in a Rectangular Basin with a Line Inlet and a Circular Outlet — Yaser Shammaa, David Z. Zhu, and Nallamuthu Rajaratnam; 135 (10), 857-64 (2009).

Measurement of Behavioral Properties of Entrained Ambient Water in a Stratified Bubble Plume — Dong-Guan Seol, Duncan B. Bryant, and Scott A. Socolofsky; 135 (11), 983-8 (2009).

Mesh generation
Investigation of the Importance of Spatial Resolution for Two-Dimensional Shallow-Water Model Accuracy — Siniša Družeta, Luka Sopta, Senka Maćešić, and Nelida Črnjarić-Žic; 135 (11), 917-25 (2009).

Mississippi
Hydrodynamic Investigation of Coastal Bridge Collapse during Hurricane Katrina — Qin Chen, Lixia Wang, and Haihong Zhao; 135 (3), 175-86 (2009).

Mississippi River
Numerical Study of Flow Affected by Bendway Weirs in Victoria Bendway, the Mississippi River — Y. Jia, S. Scott, Y. Xu, and S. S. Y. Wang; 135 (11), 902-16 (2009).

Mixing
Characteristics of a Three-Dimensional Square Jet in the Vicinity of a Free Surface — Girish Sankar, Ram Balachandar, and Rupp Carriveau; 135 (11), 989-94 (2009).

Experimental Verification of Incomplete Solute Mixing in a Pressurized Pipe Network with Multiple Cross Junctions — Inhong Song, Pedro Romero-Gomez, and Christopher Y. Choi; 135 (11), 1005-11 (2009).

Model tests
Bubble Movement in Downward-Inclined Pipes — Stephan Glauser and Martin Wickenhäuser; 135 (11), 1012-5 (2009).

Monte Carlo method
Bayesian Updating of Parameters for a Sediment Entrainment Model via Markov Chain Monte Carlo — Fu-Chun Wu and C. C. Chen; 135 (1), 22-37 (2009).

Morphology
Modeling the Evolution of Incised Streams. III: Model Application — Eddy J. Langendoen, Robert R. Wells, Robert E. Thomas, Andrew Simon, and Ronald L. Bingner; 135 (6), 476-86 (2009).

Motion
Incipient Motion of Riverbank Sediments with Outflow Seepage — Liquan Xie, Hongjun Lei, Yuzhen Yu, and Xun Sun; 135 (3), 228-33 (2009).

Mud
Uniform Flow of Modified Bingham Fluids in Narrow Cross Sections — Alessandro Cantelli; 135 (8), 640-50 (2009).

Navigation
Numerical Study of Flow Affected by Bendway Weirs in Victoria Bendway, the Mississippi River — Y. Jia, S. Scott, Y. Xu, and S. S. Y. Wang; 135 (11), 902-16 (2009).

New Mexico
Case Study: Equivalent Widths of the Middle Rio Grande, New Mexico — Claudia Leon, Pierre Y. Julien, and Drew C. Baird; 135 (4), 306-15 (2009).

New York
Case Study: Three-Dimensional Hydrodynamic Model of a Power Plant Thermal Discharge — Scott A. Lowe, Fred Schuepfer, and Dennis J. Dunning; 135 (4), 247-56 (2009).

Observation and Simulation of Surface Waves in Two Water Supply Reservoirs — Emmet M. Owens; 135 (8), 663-70 (2009).

New York City
Case Study: Three-Dimensional Hydrodynamic Model of a Power Plant Thermal Discharge — Scott A. Lowe, Fred Schuepfer, and Dennis J. Dunning; 135 (4), 247-56 (2009).

Nonlinear analysis
URANS Computations of Shallow Grid Turbulence — Ichiro Kimura, Wim S. J. Uijttewaal, Takashi Hosoda, and Md. Shahjahan Ali; 135 (2), 118-31 (2009).

Volume-Conservative Nonlinear Flood Routing — Roland K. Price; 135 (10), 838-45 (2009).

Nonpoint pollution
Estimating Nonpoint Source Pollution in the Upper Yangtze River Using the Export Coefficient Model, Remote Sensing, and Geographical Information System — Rui-min Liu, Zhi-feng Yang, Zhen-yao Shen, Shaw L. Yu, Xiao-wen Ding, Xing Wu, and Fang Liu; 135 (9), 698-704 (2009).

Numerical analysis
Numerical Study of Flow Affected by Bendway Weirs in Victoria Bendway, the Mississippi River — Y. Jia, S. Scott, Y. Xu, and S. S. Y. Wang; 135 (11), 902-16 (2009).

Numerical models
Optimal Cross-Sectional Spacing in Preissmann Scheme 1D Hydrodynamic Models — A. Castellarin, G. Di Baldassarre, P. D. Bates, and A. Brath; 135 (2), 96-105 (2009).

URANS Computations of Shallow Grid Turbulence — Ichiro Kimura, Wim S. J. Uijttewaal, Takashi Hosoda, and Md. Shahjahan Ali; 135 (2), 118-31 (2009).

Case Study: Equivalent Widths of the Middle Rio Grande, New Mexico — Claudia Leon, Pierre Y. Julien, and Drew C. Baird; 135 (4), 306-15 (2009).

Three-Dimensional Modeling of Density Current in a Straight Channel — Bahar Firoozabadi, Hossein Afshin, and Ehsan Aram; 135 (5), 393-402 (2009).

Three-Dimensional Unsteady RANS Modeling of Discontinuous Gravity Currents in Rectangular Domains — Joongcheol Paik, Afshin Eghbalzadeh, and Fotis Sotiropoulos; 135 (6), 505-21 (2009).

Stepped Spillway with Hydraulic Jumps: Application of a Numerical Model to a Scale Model of a Conceptual Prototype — Rita F. Carvalho and Rui Martins; 135 (7), 615-9 (2009).

WAF Method and Splitting Procedure for Simulating Hydro- and Thermal-Peaking Waves in Open-Channel Flows — Annunziato Siviglia and Eleuterio F. Toro; 135 (8), 651-62 (2009).

Numerical Model for Sediment Transport and Bed Degradation in the Yangtze River Channel Downstream of Three Gorges Reservoir — Gang Zhou, Hong Wang, Xuejun Shao, and Dongdong Jia; 135 (9), 729-40 (2009).

Integrated Two-Dimensional Surface and Three-Dimensional Subsurface Contaminant Transport Model Considering Soil Erosion and Sorption — Zhiguo He, Weiming Wu, and Sam S. Y. Wang; 135 (12), 1028-40 (2009).

Case Study: Design of Flood Control Systems on the Vara River by Numerical and Physical Modeling — Annunziato Siviglia, Alessandro Stocchino, and Marco Colombini; 135 (12), 1063-72 (2009).

Nutrient loads
Using Impellers to Distribute Local Nutrient Loadings in a Stratified Lake: Lake Como, Italy — Sebastián Morillo, Jörg Imberger, Jason P. Antenucci, and Diego Copetti; 135 (7), 564-74 (2009).

One dimensional flow
Unifying Criterion for the Velocity Reversal Hypothesis in Gravel-Bed Rivers — Diego Caamaño, Peter Goodwin, John M. Buffington, Jim C. P. Liou, and Steve Daley-Laursen; 135 (1), 66-70 (2009).

Optimal Cross-Sectional Spacing in Preissmann Scheme 1D Hydrodynamic Models — A. Castellarin, G. Di Baldassarre, P. D. Bates, and A. Brath; 135 (2), 96-105 (2009).

Open channel flow
Unifying Criterion for the Velocity Reversal Hypothesis in Gravel-Bed Rivers — Diego Caamaño, Peter Goodwin, John M. Buffington, Jim C. P. Liou, and Steve Daley-Laursen; 135 (1), 66-70 (2009).

URANS Computations of Shallow Grid Turbulence — Ichiro Kimura, Wim S. J. Uijttewaal, Takashi Hosoda, and Md. Shahjahan Ali; 135 (2), 118-31 (2009).

Nonlinear Mixing Length Model for Prediction of Secondary Currents in Uniform Channel Flows — Ismail Aydin; 135 (2), 146-53 (2009).

Analytical Solutions for Open-Channel Temperature Response to Unsteady Thermal Discharge and Boundary Heating — H. S. Tang and T. R. Keen; 135 (4), 327-32 (2009).

Modeling the Evolution of Incised Streams. III: Model Application — Eddy J. Langendoen, Robert R. Wells, Robert E. Thomas, Andrew Simon, and Ronald L. Bingner; 135 (6), 476-86 (2009).

New Solution of Classical Hydraulic Jump — Francesco Giuseppe Carollo, Vito Ferro, and Vincenzo Pampalone; 135 (6), 527-31 (2009).

3D Numerical Simulation of Turbulent Buoyant Flow and Heat Transport in a Curved Open Channel — Xiaobo Chao, Yafei Jia, and Sam S. Y. Wang; 135 (7), 554-63 (2009).

Experimental Observations of Flow and Bed Processes in Large-Amplitude Meandering Flume — Donatella Termini; 135 (7), 575-87 (2009).

Maximum Migration Distance of Meander Channel in Sand Using Hyperbolic Function Approach — Po-Hung Yeh, Namgyu Park, Kuang-An Chang, Hamn-Ching Chen, and Jean-Louis Briaud; 135 (8), 629-39 (2009).

WAF Method and Splitting Procedure for Simulating Hydro- and Thermal-Peaking Waves in Open-Channel Flows — Annunziato Siviglia and Eleuterio F. Toro; 135 (8), 651-62 (2009).

Reynolds Stress Anisotropy in Open-Channel Flow — Vesselina Roussinova, Ram Balachandar, and Nihar Biswas; 135 (10), 812-24 (2009).

Discharge Characteristics of Weirs of Finite Crest Length — Amir Hossein Azimi and N. Rajaratnam; 135 (12), 1081-5 (2009).

Open channels
Lagrangian Modeling of Weakly Nonlinear Nonhydrostatic Shallow Water Waves in Open Channels — Bishnu H. Devkota and Jörg Imberger; 135 (11), 926-34 (2009).

Optimization
Systematic Surge Protection for Worst-Case Transient Loadings in Water Distribution Systems — Bong Seog Jung and Bryan W. Karney; 135 (3), 218-23 (2009).

Oscillations
Numerical Oscillations in Pipe-Filling Bore Predictions by Shock-Capturing Models — Jose G. Vasconcelos, Steven J. Wright, and Philip L. Roe; 135 (4), 296-305 (2009).

Oscillatory flow
Modeling of a Rough-Wall Oscillatory Boundary Layer Using Two-Equation Turbulence Models — Ahmad Sana, Abdul-Razzaq Ghumman, and Hitoshi Tanaka; 135 (1), 60-5 (2009).

Overland flow
Comparison of 1D/1D and 1D/2D Coupled (Sewer/Surface) Hydraulic Models for Urban Flood Simulation — Jorge Leandro, Albert S. Chen, Slobodan Djordjević, and Dragan A. Savić; 135 (6), 495-504 (2009).

Integrated Two-Dimensional Surface and Three-Dimensional Subsurface Contaminant Transport Model Considering Soil Erosion and Sorption — Zhiguo He, Weiming Wu, and Sam S. Y. Wang; 135 (12), 1028-40 (2009).

Parameters
Bayesian Updating of Parameters for a Sediment Entrainment Model via Markov Chain Monte Carlo — Fu-Chun Wu and C. C. Chen; 135 (1), 22-37 (2009).

Robust Fractional-Order *PI* Controller Imple-

mented on a Laboratory Hydraulic Canal — V. Feliu-Batlle, R. Rivas-Perez, L. Sanchez-Rodriguez, and M. A. Ruiz-Torija; 135 (4), 271-82 (2009).

Analytical Solutions for Constant-Flux and Constant-Head Tests at a Finite-Diameter Well in a Wedge-Shaped Aquifer — Yen-Ju Chen, Hund-Der Yeh, and Shaw-Yang Yang; 135 (4), 333-7 (2009).

Volume-Conservative Nonlinear Flood Routing — Roland K. Price; 135 (10), 838-45 (2009).

Performance characteristics

Bridge Rail Rating Curves and Submergence Characteristics — Joshua B. Klenzendorf and Randall J. Charbeneau; 135 (2), 88-95 (2009).

Piers

Control of Scour at Bridge Piers by a Downstream Bed Sill — Carmelo Grimaldi, Roberto Gaudio, Francesco Calomino, and António H. Cardoso; 135 (1), 13-21 (2009).

Maximum Local Scour Depth at Bridge Piers under Unsteady Flow — Jihn-Sung Lai, Wen-Yi Chang, and Chin-Lien Yen; 135 (7), 609-14 (2009).

Effect of Sediment Size Scaling on Physical Modeling of Bridge Pier Scour — Seung Oh Lee and Terry W. Sturm; 135 (10), 793-802 (2009).

Detached Eddy Simulation Investigation of Turbulence at a Circular Pier with Scour Hole — G. Kirkil, G. Constantinescu, and R. Ettema; 135 (11), 888-901 (2009).

Pipe flow

Timescale Behavior of the Wall Shear Stress in Unsteady Laminar Pipe Flows — José Abreu and A. Betâmio de Almeida; 135 (5), 415-24 (2009).

Bubble Movement in Downward-Inclined Pipes — Stephan Glauser and Martin Wickenhäuser; 135 (11), 1012-5 (2009).

Pipelines

Wavelet-Galerkin Solution to the Water Hammer Equations — Ahmed M. Abdel Sattar, John R. Dickerson, and M. Hanif Chaudhry; 135 (4), 283-95 (2009).

Concentration Profiles and Solids Transport above Stationary Deposit in Enclosed Conduit — Václav Matoušek; 135 (12), 1101-6 (2009).

Pipes

Numerical Oscillations in Pipe-Filling Bore Predictions by Shock-Capturing Models — Jose G. Vasconcelos, Steven J. Wright, and Philip L. Roe; 135 (4), 296-305 (2009).

Plumes

Case Study: Intermediate Field Mixing for a Bank Discharge in a Natural River — Karen E. Dow, Peter M. Steffler, and David Z. Zhu; 135 (1), 1-12 (2009).

Measurement of Behavioral Properties of Entrained Ambient Water in a Stratified Bubble Plume — Dong-Guan Seol, Duncan B. Bryant, and Scott A. Socolofsky; 135 (11), 983-8 (2009).

Kinetic Energy Approach to Dissolving Axisymmetric Multiphase Plumes — Kristian Etienne Einarsrud and Iver Brevik; 135 (12), 1041-51 (2009).

Pollution

Integrated Two-Dimensional Surface and Three-Dimensional Subsurface Contaminant Transport Model Considering Soil Erosion and Sorption — Zhiguo He, Weiming Wu, and Sam S. Y. Wang; 135 (12), 1028-40 (2009).

Pools

Unifying Criterion for the Velocity Reversal Hypothesis in Gravel-Bed Rivers — Diego Caamaño, Peter Goodwin, John M. Buffington, Jim C. P. Liou, and Steve Daley-Laursen; 135 (1), 66-70 (2009).

Potential flow

Calculation of Contraction Coefficient under Sluice Gates and Application to Discharge Measurement — Gilles Belaud, Ludovic Cassan, and Jean-Pierre Baume; 135 (12), 1086-91 (2009).

Power plants

Case Study: Three-Dimensional Hydrodynamic Model of a Power Plant Thermal Discharge — Scott A. Lowe, Fred Schuepfer, and Dennis J. Dunning; 135 (4), 247-56 (2009).

Predictions

Numerical Oscillations in Pipe-Filling Bore Predictions by Shock-Capturing Models — Jose G. Vasconcelos, Steven J. Wright, and Philip L. Roe; 135 (4), 296-305 (2009).

Use of the Lorenz Curve to Quantify Statistical Nonuniformity of Sediment Transport Rate — Alessio Radice; 135 (4), 320-6 (2009).

Pressure pipes

Experimental Verification of Incomplete Solute Mixing in a Pressurized Pipe Network with Multiple Cross Junctions — Inhong Song, Pedro Romero-Gomez, and Christopher Y. Choi; 135 (11), 1005-11 (2009).

Pumps

Using Impellers to Distribute Local Nutrient Loadings in a Stratified Lake: Lake Como, Italy — Sebastián Morillo, Jörg Imberger, Jason P. Antenucci, and Diego Copetti; 135 (7), 564-74 (2009).

Rainfall

Physical Modeling of Sheet Flow on Rough Impervious Surfaces — Randall J. Charbeneau, Jaehak Jeong, and Michael E. Barrett; 135 (6), 487-94 (2009).

Integrated Two-Dimensional Surface and Three-Dimensional Subsurface Contaminant Transport Model Considering Soil Erosion and Sorption — Zhiguo He, Weiming Wu, and Sam S. Y. Wang; 135 (12), 1028-40 (2009).

Storm-Water Infiltration and Focused Recharge Modeling with Finite-Volume Two-Dimensional Richards Equation: Application to an Experimental Rain Garden — Jazmín E. Aravena and Alejandro Dussaillant; 135 (12), 1073-80 (2009).

Ramps

Energy Dissipation on Block Ramps with Staggered Boulders — Zulfequar Ahmad, Nadimetla M. Petappa, and Bernhard Westrich; 135 (6), 522-6 (2009).

Ratings

Generalized Flow Rating Equations at Prototype Gated Spillways — Matahel Ansar and Zhiming Chen; 135 (7), 602-8 (2009).

Regression analysis

Sensitivity Analysis for Hydraulic Models — Jim W. Hall, Shawn A. Boyce, Yueling Wang, Richard J. Dawson, Stefano Tarantola, and Andrea Saltelli; 135 (11), 959-69 (2009).

Remote sensing

Estimating Nonpoint Source Pollution in the Upper Yangtze River Using the Export Coefficient Model, Remote Sensing, and Geographical Information System — Rui-min Liu, Zhi-feng Yang, Zhen-yao Shen, Shaw L. Yu, Xiao-wen Ding, Xing Wu, and Fang Liu; 135 (9), 698-704 (2009).

Reservoirs

Using Impellers to Distribute Local Nutrient Loadings in a Stratified Lake: Lake Como, Italy — Sebastián Morillo, Jörg Imberger, Jason P. Antenucci, and Diego Copetti; 135 (7), 564-74 (2009).

Observation and Simulation of Surface Waves in Two Water Supply Reservoirs — Emmet M. Owens; 135 (8), 663-70 (2009).

Channel Degradation Downstream from the Three Gorges Project and Its Impacts on Flood Level — Yitian Li, Zhaohua Sun, Yun Liu, and Jinyun Deng; 135 (9), 718-28 (2009).

Numerical Model for Sediment Transport and Bed Degradation in the Yangtze River Channel Downstream of Three Gorges Reservoir — Gang Zhou, Hong Wang, Xuejun Shao, and Dongdong Jia; 135 (9), 729-40 (2009).

Measurement of Behavioral Properties of Entrained Ambient Water in a Stratified Bubble Plume — Dong-Guan Seol, Duncan B. Bryant, and Scott A. Socolofsky; 135 (11), 983-8 (2009).

Residence time

Using Impellers to Distribute Local Nutrient Loadings in a Stratified Lake: Lake Como, Italy — Sebastián Morillo, Jörg Imberger, Jason P. Antenucci, and Diego Copetti; 135 (7), 564-74 (2009).

Restoration

Effects of Vanes and W-Weir on Sediment Transport in Meandering Channels — Faruk Bhuiyan, Richard D. Hey, and Peter R. Wormleaton; 135 (5), 339-49 (2009).

Revetments

Riprap Stability: Transverse and Longitudinal versus Continuous Protections — Gustavo Adolfo M. de Almeida and Juan P. Martín-Vide; 135 (6), 447-56 (2009).

Reynolds number

Resistance Characteristics of Surface Aerators — Achanta Ramakrishna Rao and Bimlesh Kumar; 135 (1), 38-44 (2009).

Local Balance Unsteady Friction Model — Giuseppe Pezzinga; 135 (1), 45-56 (2009).

Riprap

Riprap Stability: Transverse and Longitudinal versus Continuous Protections — Gustavo Adolfo M. de Almeida and Juan P. Martín-Vide; 135 (6), 447-56 (2009).

Protecting Vertical-Wall Abutments with Riprap Mattresses — António H. Cardoso and Cristina M. S. Fael; 135 (6), 457-65 (2009).

River bank erosion

Incipient Motion of Riverbank Sediments with Outflow Seepage — Liquan Xie, Hongjun Lei,

Yuzhen Yu, and Xun Sun; 135 (3), 228-33 (2009).

Modeling the Evolution of Incised Streams. III: Model Application — Eddy J. Langendoen, Robert R. Wells, Robert E. Thomas, Andrew Simon, and Ronald L. Bingner; 135 (6), 476-86 (2009).

Experimental Observations of Flow and Bed Processes in Large-Amplitude Meandering Flume — Donatella Termini; 135 (7), 575-87 (2009).

Test of a Method to Calculate Near-Bank Velocity and Boundary Shear Stress — Jason W. Kean, Roger A. Kuhnle, J. Dungan Smith, Carlos V. Alonso, and Eddy J. Langendoen; 135 (7), 588-601 (2009).

Maximum Migration Distance of Meander Channel in Sand Using Hyperbolic Function Approach — Po-Hung Yeh, Namgyu Park, Kuang-An Chang, Hamn-Ching Chen, and Jean-Louis Briaud; 135 (8), 629-39 (2009).

Numerical Model for Sediment Transport and Bed Degradation in the Yangtze River Channel Downstream of Three Gorges Reservoir — Gang Zhou, Hong Wang, Xuejun Shao, and Dongdong Jia; 135 (9), 729-40 (2009).

River bank stabilization

Reduction of Bend Scour by an Outer Bank Footing: Flow Field and Turbulence — M. Roca, K. Blanckaert, and J. P. Martín-Vide; 135 (5), 361-8 (2009).

River basins

Estimating Nonpoint Source Pollution in the Upper Yangtze River Using the Export Coefficient Model, Remote Sensing, and Geographical Information System — Rui-min Liu, Zhi-feng Yang, Zhen-yao Shen, Shaw L. Yu, Xiao-wen Ding, Xing Wu, and Fang Liu; 135 (9), 698-704 (2009).

River beds

On the Quantification of the Bed Development Time of Alluvial Meandering Streams — Andrew D. Binns and Ana Maria Ferreira da Silva; 135 (5), 350-60 (2009).

Experimental Observations of Flow and Bed Processes in Large-Amplitude Meandering Flume — Donatella Termini; 135 (7), 575-87 (2009).

Ecological and Hydraulic Studies of Step-Pool Systems — Zhao-yin Wang, Charles Steven Melching, Xue-hua Duan, and Guo-an Yu; 135 (9), 705-17 (2009).

Numerical Model for Sediment Transport and Bed Degradation in the Yangtze River Channel Downstream of Three Gorges Reservoir — Gang Zhou, Hong Wang, Xuejun Shao, and Dongdong Jia; 135 (9), 729-40 (2009).

3D Numerical Simulation for Water Flows and Sediment Deposition in Dam Areas of the Three Gorges Project — Yong-jun Lu and Zhao-yin Wang; 135 (9), 755-69 (2009).

Lagrangian Modeling of the Dynamics of River and Floodplain Flow — Bishnu H. Devkota and Jörg Imberger; 135 (10), 771-82 (2009).

River flow

Lagrangian Modeling of the Dynamics of River and Floodplain Flow — Bishnu H. Devkota and Jörg Imberger; 135 (10), 771-82 (2009).

River systems

Optimal Cross-Sectional Spacing in Preissmann Scheme 1D Hydrodynamic Models — A. Castellarin, G. Di Baldassarre, P. D. Bates, and A. Brath; 135 (2), 96-105 (2009).

Rivers

Case Study: Intermediate Field Mixing for a Bank Discharge in a Natural River — Karen E. Dow, Peter M. Steffler, and David Z. Zhu; 135 (1), 1-12 (2009).

Modeling Floating Objects at River Structures — Richard L. Stockstill, Steven F. Daly, and Mark A. Hopkins; 135 (5), 403-14 (2009).

Riprap Stability: Transverse and Longitudinal versus Continuous Protections — Gustavo Adolfo M. de Almeida and Juan P. Martín-Vide; 135 (6), 447-56 (2009).

Maximum Migration Distance of Meander Channel in Sand Using Hyperbolic Function Approach — Po-Hung Yeh, Namgyu Park, Kuang-An Chang, Hamn-Ching Chen, and Jean-Louis Briaud; 135 (8), 629-39 (2009).

Rocks

Energy Dissipation on Block Ramps with Staggered Boulders — Zulfequar Ahmad, Nadimetla M. Petappa, and Bernhard Westrich; 135 (6), 522-6 (2009).

Influence of Plunge Pool Geometry on High-Velocity Jet Impact Pressures and Pressure Propagation inside Fissured Rock Media — Pedro A. Manso, Erik F. R. Bollaert, and Anton J. Schleiss; 135 (10), 783-92 (2009).

Roughness

Elemental T and Y Shapes of Tree Networks of Ducts with Various Cross-Sectional Shapes — W. Wechsatol, S. Lorente, A. Bejan, and J. C. Ordonez; 135 (2), 132-9 (2009).

Runoff

Case Study: Hydraulic Modeling of Runoff Processes in Ghanaian Inland Valleys — Koichi Unami, Toshihiko Kawachi, Gordana Kranjac-Berisavljevic, Felix Kofi Abagale, Shigeya Maeda, and Junichiro Takeuchi; 135 (7), 539-53 (2009).

Sand

Two-Dimensional Nonequilibrium Noncohesive and Cohesive Sediment Transport Model — M. C. Hung, T. Y. Hsieh, C. H. Wu, and J. C. Yang; 135 (5), 369-82 (2009).

Maximum Migration Distance of Meander Channel in Sand Using Hyperbolic Function Approach — Po-Hung Yeh, Namgyu Park, Kuang-An Chang, Hamn-Ching Chen, and Jean-Louis Briaud; 135 (8), 629-39 (2009).

Scour

Control of Scour at Bridge Piers by a Downstream Bed Sill — Carmelo Grimaldi, Roberto Gaudio, Francesco Calomino, and António H. Cardoso; 135 (1), 13-21 (2009).

Turbulent Stresses at the Bottom Surface near an Abutment: Laboratory-Scale Numerical Experiment — Anna Teruzzi, Francesco Ballio, and Vincenzo Armenio; 135 (2), 106-17 (2009).

Constriction Effects in Clear-Water Scour at Abutments — Francesco Ballio, Anna Teruzzi, and Alessio Radice; 135 (2), 140-5 (2009).

Local Scour Caused by Submerged Square Jets under Model Ice Cover — Jueyi Sui, M. A. A. Faruque, and Ram Balachandar; 135 (4), 316-9 (2009).

Reduction of Bend Scour by an Outer Bank Footing: Flow Field and Turbulence — M. Roca, K. Blanckaert, and J. P. Martín-Vide; 135 (5), 361-8 (2009).

Countermeasures against Local Scouring at Bridge Piers: Slot and Combined System of Slot and Bed Sill — Carmelo Grimaldi, Roberto Gaudio, Francesco Calomino, and António H. Cardoso; 135 (5), 425-31 (2009).

Protecting Vertical-Wall Abutments with Riprap Mattresses — António H. Cardoso and Cristina M. S. Fael; 135 (6), 457-65 (2009).

Scouring at Bed Sills as a Response to Flash Floods — Matteo Tregnaghi, Andrea Marion, and Stephen Coleman; 135 (6), 466-75 (2009).

Maximum Local Scour Depth at Bridge Piers under Unsteady Flow — Jihn-Sung Lai, Wen-Yi Chang, and Chin-Lien Yen; 135 (7), 609-14 (2009).

Influence of Plunge Pool Geometry on High-Velocity Jet Impact Pressures and Pressure Propagation inside Fissured Rock Media — Pedro A. Manso, Erik F. R. Bollaert, and Anton J. Schleiss; 135 (10), 783-92 (2009).

Effect of Sediment Size Scaling on Physical Modeling of Bridge Pier Scour — Seung Oh Lee and Terry W. Sturm; 135 (10), 793-802 (2009).

Local Scour Downstream of Positive-Step Stilling Basins — Giuseppe Oliveto and Victor Comuniello; 135 (10), 846-51 (2009).

Rapid Profiling of an Evolving Bed Form Using Planar Laser Sheet Illumination — B. D. Younkin and D. F. Hill; 135 (10), 852-6 (2009).

Detached Eddy Simulation Investigation of Turbulence at a Circular Pier with Scour Hole — G. Kirkil, G. Constantinescu, and R. Ettema; 135 (11), 888-901 (2009).

Sea water

Experimental Studies on Vertical Dense Jets in a Flowing Current — Endam Gungor and Philip J. W. Roberts; 135 (11), 935-48 (2009).

Secondary flow

Nonlinear Mixing Length Model for Prediction of Secondary Currents in Uniform Channel Flows — Ismail Aydin; 135 (2), 146-53 (2009).

Turbulent Stresses and Secondary Currents in a Tidal-Forced Channel with Significant Curvature and Asymmetric Bed Forms — Derek A. Fong, Stephen G. Monismith, Mark T. Stacey, and Jon R. Burau; 135 (3), 198-208 (2009).

Reduction of Bend Scour by an Outer Bank Footing: Flow Field and Turbulence — M. Roca, K. Blanckaert, and J. P. Martín-Vide; 135 (5), 361-8 (2009).

Maximum Migration Distance of Meander Channel in Sand Using Hyperbolic Function Approach — Po-Hung Yeh, Namgyu Park, Kuang-An Chang, Hamn-Ching Chen, and Jean-Louis Briaud; 135 (8), 629-39 (2009).

Sediment

Bayesian Updating of Parameters for a Sediment Entrainment Model via Markov Chain Monte Carlo — Fu-Chun Wu and C. C. Chen; 135 (1), 22-37 (2009).

Depth-Dependent Dispersion Coefficient for Modeling of Vertical Solute Exchange in a Lake Bed under Surface Waves — Qin Qian, Jeffrey J. Clark, Vaughan R. Voller, and Heinz G. Stefan; 135 (3), 187-97 (2009).

Investigation on the Dimensions and Shape of a Submerged Vane for Sediment Management in Alluvial Channels — Huei-Tau Ouyang; 135 (3), 209-17 (2009).

Combined Flow over Weir and under Gate — Jamal M. V. Samani and Mehdi Mazaheri; 135 (3), 224-7 (2009).

Incipient Motion of Riverbank Sediments with Outflow Seepage — Liquan Xie, Hongjun Lei, Yuzhen Yu, and Xun Sun; 135 (3), 228-33 (2009).

Two-Dimensional Nonequilibrium Noncohesive and Cohesive Sediment Transport Model — M. C. Hung, T. Y. Hsieh, C. H. Wu, and J. C. Yang; 135 (5), 369-82 (2009).

Maximum Local Scour Depth at Bridge Piers under Unsteady Flow — Jihn-Sung Lai, Wen-Yi Chang, and Chin-Lien Yen; 135 (7), 609-14 (2009).

Channel Degradation Downstream from the Three Gorges Project and Its Impacts on Flood Level — Yitian Li, Zhaohua Sun, Yun Liu, and Jinyun Deng; 135 (9), 718-28 (2009).

3D Numerical Simulation for Water Flows and Sediment Deposition in Dam Areas of the Three Gorges Project — Yong-jun Lu and Zhao-yin Wang; 135 (9), 755-69 (2009).

Sediment transport

Use of the Lorenz Curve to Quantify Statistical Nonuniformity of Sediment Transport Rate — Alessio Radice; 135 (4), 320-6 (2009).

Effects of Vanes and W-Weir on Sediment Transport in Meandering Channels — Faruk Bhuiyan, Richard D. Hey, and Peter R. Wormleaton; 135 (5), 339-49 (2009).

Riprap Stability: Transverse and Longitudinal versus Continuous Protections — Gustavo Adolfo M. de Almeida and Juan P. Martín-Vide; 135 (6), 447-56 (2009).

Modeling the Evolution of Incised Streams. III: Model Application — Eddy J. Langendoen, Robert R. Wells, Robert E. Thomas, Andrew Simon, and Ronald L. Bingner; 135 (6), 476-86 (2009).

Test of a Method to Calculate Near-Bank Velocity and Boundary Shear Stress — Jason W. Kean, Roger A. Kuhnle, J. Dungan Smith, Carlos V. Alonso, and Eddy J. Langendoen; 135 (7), 588-601 (2009).

Numerical Model for Sediment Transport and Bed Degradation in the Yangtze River Channel Downstream of Three Gorges Reservoir — Gang Zhou, Hong Wang, Xuejun Shao, and Dongdong Jia; 135 (9), 729-40 (2009).

Formation and Evolution of the Jiuduansha Shoal over the Past 50 Years — Xiaoping Xie, Zhaoyin Wang, and Charles S. Melching; 135 (9), 741-54 (2009).

Effect of Sediment Size Scaling on Physical Modeling of Bridge Pier Scour — Seung Oh Lee and Terry W. Sturm; 135 (10), 793-802 (2009).

Mean Flow and Turbulence around a Laboratory Spur Dike — Jennifer G. Duan; 135 (10), 803-11 (2009).

Local Scour Downstream of Positive-Step Stilling Basins — Giuseppe Oliveto and Victor Comuniello; 135 (10), 846-51 (2009).

Rapid Profiling of an Evolving Bed Form Using Planar Laser Sheet Illumination — B. D. Younkin and D. F. Hill; 135 (10), 852-6 (2009).

Maximum Level and Time to Peak of Dam-Break Waves on Mobile Horizontal Bed — João G. A. B. Leal, Rui M. L. Ferreira, and António H. Cardoso; 135 (11), 995-9 (2009).

Concentration Profiles and Solids Transport above Stationary Deposit in Enclosed Conduit — Václav Matoušek; 135 (12), 1101-6 (2009).

Seepage

Incipient Motion of Riverbank Sediments with Outflow Seepage — Liquan Xie, Hongjun Lei, Yuzhen Yu, and Xun Sun; 135 (3), 228-33 (2009).

Sensitivity analysis

Investigation of the Importance of Spatial Resolution for Two-Dimensional Shallow-Water Model Accuracy — Siniša Družeta, Luka Sopta, Senka Maćešić, and Nelida Črnjarić-Žic; 135 (11), 917-25 (2009).

Sensitivity Analysis for Hydraulic Models — Jim W. Hall, Shawn A. Boyce, Yueling Wang, Richard J. Dawson, Stefano Tarantola, and Andrea Saltelli; 135 (11), 959-69 (2009).

Settling velocity

Assessment of Hydrodynamic Separators for Storm-Water Treatment — Matthew A. Wilson, Omid Mohseni, John S. Gulliver, Raymond M. Hozalski, and Heinz G. Stefan; 135 (5), 383-92 (2009).

Sewers

Comparison of 1D/1D and 1D/2D Coupled (Sewer/Surface) Hydraulic Models for Urban Flood Simulation — Jorge Leandro, Albert S. Chen, Slobodan Djordjević, and Dragan A. Savić; 135 (6), 495-504 (2009).

Shafts

Hydraulics of Tangential Vortex Intake for Urban Drainage — Daeyoung Yu and Joseph H. W. Lee; 135 (3), 164-74 (2009).

Shallow water

Mass Transport in Shallow Turbulent Wake Flow by Planar Concentration Analysis Technique — Carl F. v. Carmer, Andreas C. Rummel, and Gerhard H. Jirka; 135 (4), 257-70 (2009).

Modeling Floating Objects at River Structures — Richard L. Stockstill, Steven F. Daly, and Mark A. Hopkins; 135 (5), 403-14 (2009).

Case Study: Hydraulic Modeling of Runoff Processes in Ghanaian Inland Valleys — Koichi Unami, Toshihiko Kawachi, Gordana Kranjac-Berisavljevic, Felix Kofi Abagale, Shigeya Maeda, and Junichiro Takeuchi; 135 (7), 539-53 (2009).

Investigation of the Importance of Spatial Resolution for Two-Dimensional Shallow-Water Model Accuracy — Siniša Družeta, Luka Sopta, Senka Maćešić, and Nelida Črnjarić-Žic; 135 (11), 917-25 (2009).

Lagrangian Modeling of Weakly Nonlinear Nonhydrostatic Shallow Water Waves in Open Channels — Bishnu H. Devkota and Jörg Imberger; 135 (11), 926-34 (2009).

Shear failure

Riprap Stability: Transverse and Longitudinal versus Continuous Protections — Gustavo Adolfo M. de Almeida and Juan P. Martín-Vide; 135 (6), 447-56 (2009).

Shear stress

Modeling of a Rough-Wall Oscillatory Boundary Layer Using Two-Equation Turbulence Models — Ahmad Sana, Abdul-Razzaq Ghumman, and Hitoshi Tanaka; 135 (1), 60-5 (2009).

Incipient Motion of Riverbank Sediments with Outflow Seepage — Liquan Xie, Hongjun Lei, Yuzhen Yu, and Xun Sun; 135 (3), 228-33 (2009).

Timescale Behavior of the Wall Shear Stress in Unsteady Laminar Pipe Flows — José Abreu and A. Betâmio de Almeida; 135 (5), 415-24 (2009).

Test of a Method to Calculate Near-Bank Velocity and Boundary Shear Stress — Jason W. Kean, Roger A. Kuhnle, J. Dungan Smith, Carlos V. Alonso, and Eddy J. Langendoen; 135 (7), 588-601 (2009).

Sheet flow

Physical Modeling of Sheet Flow on Rough Impervious Surfaces — Randall J. Charbeneau, Jaehak Jeong, and Michael E. Barrett; 135 (6), 487-94 (2009).

Concentration Profiles and Solids Transport above Stationary Deposit in Enclosed Conduit — Václav Matoušek; 135 (12), 1101-6 (2009).

Shoaling

Formation and Evolution of the Jiuduansha Shoal over the Past 50 Years — Xiaoping Xie, Zhaoyin Wang, and Charles S. Melching; 135 (9), 741-54 (2009).

Shoreline changes

Formation and Evolution of the Jiuduansha Shoal over the Past 50 Years — Xiaoping Xie, Zhaoyin Wang, and Charles S. Melching; 135 (9), 741-54 (2009).

Simulation

3D Numerical Simulation of Turbulent Buoyant Flow and Heat Transport in a Curved Open Channel — Xiaobo Chao, Yafei Jia, and Sam S. Y. Wang; 135 (7), 554-63 (2009).

WAF Method and Splitting Procedure for Simulating Hydro- and Thermal-Peaking Waves in Open-Channel Flows — Annunziato Siviglia and Eleuterio F. Toro; 135 (8), 651-62 (2009).

Investigation of Two Elemental Error Sources in Boat-Mounted Acoustic Doppler Current Profiler Measurements by Large Eddy Simulations — T. Tokyay, G. Constantinescu, and Juan A. Gonzalez-Castro; 135 (11), 875-87 (2009).

Detached Eddy Simulation Investigation of Turbulence at a Circular Pier with Scour Hole — G. Kirkil, G. Constantinescu, and R. Ettema; 135 (11), 888-901 (2009).

Slopes

Physical Modeling of Sheet Flow on Rough Impervious Surfaces — Randall J. Charbeneau, Jaehak Jeong, and Michael E. Barrett; 135 (6), 487-94 (2009).

Slurries

Concentration Profiles and Solids Transport above

Stationary Deposit in Enclosed Conduit — Václav Matoušek; 135 (12), 1101-6 (2009).

Soil consolidation

Two-Dimensional Nonequilibrium Noncohesive and Cohesive Sediment Transport Model — M. C. Hung, T. Y. Hsieh, C. H. Wu, and J. C. Yang; 135 (5), 369-82 (2009).

Solid flow

Uniform Flow of Modified Bingham Fluids in Narrow Cross Sections — Alessandro Cantelli; 135 (8), 640-50 (2009).

Solutes

Depth-Dependent Dispersion Coefficient for Modeling of Vertical Solute Exchange in a Lake Bed under Surface Waves — Qin Qian, Jeffrey J. Clark, Vaughan R. Voller, and Heinz G. Stefan; 135 (3), 187-97 (2009).

Sorption

Integrated Two-Dimensional Surface and Three-Dimensional Subsurface Contaminant Transport Model Considering Soil Erosion and Sorption — Zhiguo He, Weiming Wu, and Sam S. Y. Wang; 135 (12), 1028-40 (2009).

Spatial analysis

Investigation of the Importance of Spatial Resolution for Two-Dimensional Shallow-Water Model Accuracy — Siniša Družeta, Luka Sopta, Senka Maćešić, and Nelida Črnjarić-Žic; 135 (11), 917-25 (2009).

Spillways

Generalized Flow Rating Equations at Prototype Gated Spillways — Matahel Ansar and Zhiming Chen; 135 (7), 602-8 (2009).

Stepped Spillway with Hydraulic Jumps: Application of a Numerical Model to a Scale Model of a Conceptual Prototype — Rita F. Carvalho and Rui Martins; 135 (7), 615-9 (2009).

Skimming Flow in the Nonaerated Region of Stepped Spillways over Embankment Dams — Inês Meireles and Jorge Matos; 135 (8), 685-9 (2009).

Local Scour Downstream of Positive-Step Stilling Basins — Giuseppe Oliveto and Victor Comuniello; 135 (10), 846-51 (2009).

Developing Flow Region and Pressure Fluctuations on Steeply Sloping Stepped Spillways — António Amador, Martí Sánchez-Juny, and Josep Dolz; 135 (12), 1092-100 (2009).

Stability

Energy Dissipation on Block Ramps with Staggered Boulders — Zulfequar Ahmad, Nadimetla M. Petappa, and Bernhard Westrich; 135 (6), 522-6 (2009).

Statistics

Use of the Lorenz Curve to Quantify Statistical Nonuniformity of Sediment Transport Rate — Alessio Radice; 135 (4), 320-6 (2009).

Stilling basins

Local Scour Downstream of Positive-Step Stilling Basins — Giuseppe Oliveto and Victor Comuniello; 135 (10), 846-51 (2009).

Stochastic models

3D Numerical Simulation for Water Flows and Sediment Deposition in Dam Areas of the Three Gorges Project — Yong-jun Lu and Zhao-yin Wang; 135 (9), 755-69 (2009).

Storm surge

Hydrodynamic Investigation of Coastal Bridge Collapse during Hurricane Katrina — Qin Chen, Lixia Wang, and Haihong Zhao; 135 (3), 175-86 (2009).

Stormwater management

Hydraulics of Tangential Vortex Intake for Urban Drainage — Daeyoung Yu and Joseph H. W. Lee; 135 (3), 164-74 (2009).

Assessment of Hydrodynamic Separators for Storm-Water Treatment — Matthew A. Wilson, Omid Mohseni, John S. Gulliver, Raymond M. Hozalski, and Heinz G. Stefan; 135 (5), 383-92 (2009).

Design of Street Sump Inlet — James C. Y. Guo, Ken A. MacKenzie, and Amanullah Mommandi; 135 (11), 1000-4 (2009).

Storm-Water Infiltration and Focused Recharge Modeling with Finite-Volume Two-Dimensional Richards Equation: Application to an Experimental Rain Garden — Jazmín E. Aravena and Alejandro Dussaillant; 135 (12), 1073-80 (2009).

Stratification

Measurement of Behavioral Properties of Entrained Ambient Water in a Stratified Bubble Plume — Dong-Guan Seol, Duncan B. Bryant, and Scott A. Socolofsky; 135 (11), 983-8 (2009).

Stratified flow

Density Effect on Round Turbulent Hypersaline Fountain — Raouf E. Baddour and Hua Zhang; 135 (1), 57-9 (2009).

Stream improvement

Unifying Criterion for the Velocity Reversal Hypothesis in Gravel-Bed Rivers — Diego Caamaño, Peter Goodwin, John M. Buffington, Jim C. P. Liou, and Steve Daley-Laursen; 135 (1), 66-70 (2009).

Streams

Case Study: Equivalent Widths of the Middle Rio Grande, New Mexico — Claudia Leon, Pierre Y. Julien, and Drew C. Baird; 135 (4), 306-15 (2009).

Streets

Design of Street Sump Inlet — James C. Y. Guo, Ken A. MacKenzie, and Amanullah Mommandi; 135 (11), 1000-4 (2009).

Submerged flow

Calculation of Contraction Coefficient under Sluice Gates and Application to Discharge Measurement — Gilles Belaud, Ludovic Cassan, and Jean-Pierre Baume; 135 (12), 1086-91 (2009).

Submerged jets

Characteristics of a Three-Dimensional Square Jet in the Vicinity of a Free Surface — Girish Sankar, Ram Balachandar, and Rupp Carriveau; 135 (11), 989-94 (2009).

Submerging

Bridge Rail Rating Curves and Submergence Characteristics — Joshua B. Klenzendorf and Randall J. Charbeneau; 135 (2), 88-95 (2009).

Investigation on the Dimensions and Shape of a Submerged Vane for Sediment Management in Alluvial Channels — Huei-Tau Ouyang; 135 (3), 209-17 (2009).

Combined Flow over Weir and under Gate — Jamal M. V. Samani and Mehdi Mazaheri; 135 (3), 224-7 (2009).

Local Scour Caused by Submerged Square Jets under Model Ice Cover — Jueyi Sui, M. A. A. Faruque, and Ram Balachandar; 135 (4), 316-9 (2009).

Critical Submergence for Multiple Pipe Intakes — Nevzat Yıldırım and Kerem Taştan; 135 (12), 1052-62 (2009).

Subsurface flow

Integrated Two-Dimensional Surface and Three-Dimensional Subsurface Contaminant Transport Model Considering Soil Erosion and Sorption — Zhiguo He, Weiming Wu, and Sam S. Y. Wang; 135 (12), 1028-40 (2009).

Surface roughness

Physical Modeling of Sheet Flow on Rough Impervious Surfaces — Randall J. Charbeneau, Jaehak Jeong, and Michael E. Barrett; 135 (6), 487-94 (2009).

Surface waves

Hydrodynamic Investigation of Coastal Bridge Collapse during Hurricane Katrina — Qin Chen, Lixia Wang, and Haihong Zhao; 135 (3), 175-86 (2009).

Depth-Dependent Dispersion Coefficient for Modeling of Vertical Solute Exchange in a Lake Bed under Surface Waves — Qin Qian, Jeffrey J. Clark, Vaughan R. Voller, and Heinz G. Stefan; 135 (3), 187-97 (2009).

Observation and Simulation of Surface Waves in Two Water Supply Reservoirs — Emmet M. Owens; 135 (8), 663-70 (2009).

Surge

Systematic Surge Protection for Worst-Case Transient Loadings in Water Distribution Systems — Bong Seog Jung and Bryan W. Karney; 135 (3), 218-23 (2009).

Suspended loads

3D Numerical Simulation for Water Flows and Sediment Deposition in Dam Areas of the Three Gorges Project — Yong-jun Lu and Zhao-yin Wang; 135 (9), 755-69 (2009).

Suspended sediment

Assessment of Hydrodynamic Separators for Storm-Water Treatment — Matthew A. Wilson, Omid Mohseni, John S. Gulliver, Raymond M. Hozalski, and Heinz G. Stefan; 135 (5), 383-92 (2009).

Suspended solids

Concentration Profiles and Solids Transport above Stationary Deposit in Enclosed Conduit — Václav Matoušek; 135 (12), 1101-6 (2009).

Temperature distribution

3D Numerical Simulation of Turbulent Buoyant Flow and Heat Transport in a Curved Open Channel — Xiaobo Chao, Yafei Jia, and Sam S. Y. Wang; 135 (7), 554-63 (2009).

Temperature effects

WAF Method and Splitting Procedure for Simulating Hydro- and Thermal-Peaking Waves in Open-Channel Flows — Annunziato Siviglia and Eleuterio F. Toro; 135 (8), 651-62 (2009).

Thermal factors

Case Study: Three-Dimensional Hydrodynamic Model of a Power Plant Thermal Discharge — Scott A. Lowe, Fred Schuepfer, and Dennis J. Dunning; 135 (4), 247-56 (2009).

Analytical Solutions for Open-Channel Temperature Response to Unsteady Thermal Discharge and Boundary Heating — H. S. Tang and T. R. Keen; 135 (4), 327-32 (2009).

WAF Method and Splitting Procedure for Simulating Hydro- and Thermal-Peaking Waves in Open-Channel Flows — Annunziato Siviglia and Eleuterio F. Toro; 135 (8), 651-62 (2009).

Three-dimensional models

Case Study: Three-Dimensional Hydrodynamic Model of a Power Plant Thermal Discharge — Scott A. Lowe, Fred Schuepfer, and Dennis J. Dunning; 135 (4), 247-56 (2009).

Three-Dimensional Modeling of Density Current in a Straight Channel — Bahar Firoozabadi, Hossein Afshin, and Ehsan Aram; 135 (5), 393-402 (2009).

Three-Dimensional Unsteady RANS Modeling of Discontinuous Gravity Currents in Rectangular Domains — Joongcheol Paik, Afshin Eghbalzadeh, and Fotis Sotiropoulos; 135 (6), 505-21 (2009).

Numerical Study of Flow Affected by Bendway Weirs in Victoria Bendway, the Mississippi River — Y. Jia, S. Scott, Y. Xu, and S. S. Y. Wang; 135 (11), 902-16 (2009).

Tidal currents

Turbulent Stresses and Secondary Currents in a Tidal-Forced Channel with Significant Curvature and Asymmetric Bed Forms — Derek A. Fong, Stephen G. Monismith, Mark T. Stacey, and Jon R. Burau; 135 (3), 198-208 (2009).

Time factors

On the Quantification of the Bed Development Time of Alluvial Meandering Streams — Andrew D. Binns and Ana Maria Ferreira da Silva; 135 (5), 350-60 (2009).

Topography

On the Quantification of the Bed Development Time of Alluvial Meandering Streams — Andrew D. Binns and Ana Maria Ferreira da Silva; 135 (5), 350-60 (2009).

Transient flow

Wavelet-Galerkin Solution to the Water Hammer Equations — Ahmed M. Abdel Sattar, John R. Dickerson, and M. Hanif Chaudhry; 135 (4), 283-95 (2009).

Numerical Oscillations in Pipe-Filling Bore Predictions by Shock-Capturing Models — Jose G. Vasconcelos, Steven J. Wright, and Philip L. Roe; 135 (4), 296-305 (2009).

Transient loads

Systematic Surge Protection for Worst-Case Transient Loadings in Water Distribution Systems — Bong Seog Jung and Bryan W. Karney; 135 (3), 218-23 (2009).

Transport rate

Use of the Lorenz Curve to Quantify Statistical Nonuniformity of Sediment Transport Rate — Alessio Radice; 135 (4), 320-6 (2009).

Turbulence

Modeling of a Rough-Wall Oscillatory Boundary Layer Using Two-Equation Turbulence Models — Ahmad Sana, Abdul-Razzaq Ghumman, and Hitoshi Tanaka; 135 (1), 60-5 (2009).

URANS Computations of Shallow Grid Turbulence — Ichiro Kimura, Wim S. J. Uijttewaal, Takashi Hosoda, and Md. Shahjahan Ali; 135 (2), 118-31 (2009).

Turbulent Stresses and Secondary Currents in a Tidal-Forced Channel with Significant Curvature and Asymmetric Bed Forms — Derek A. Fong, Stephen G. Monismith, Mark T. Stacey, and Jon R. Burau; 135 (3), 198-208 (2009).

Reduction of Bend Scour by an Outer Bank Footing: Flow Field and Turbulence — M. Roca, K. Blanckaert, and J. P. Martín-Vide; 135 (5), 361-8 (2009).

Three-Dimensional Modeling of Density Current in a Straight Channel — Bahar Firoozabadi, Hossein Afshin, and Ehsan Aram; 135 (5), 393-402 (2009).

Three-Dimensional Unsteady RANS Modeling of Discontinuous Gravity Currents in Rectangular Domains — Joongcheol Paik, Afshin Eghbalzadeh, and Fotis Sotiropoulos; 135 (6), 505-21 (2009).

3D Numerical Simulation of Turbulent Buoyant Flow and Heat Transport in a Curved Open Channel — Xiaobo Chao, Yafei Jia, and Sam S. Y. Wang; 135 (7), 554-63 (2009).

Effect of Sediment Size Scaling on Physical Modeling of Bridge Pier Scour — Seung Oh Lee and Terry W. Sturm; 135 (10), 793-802 (2009).

Reynolds Stress Anisotropy in Open-Channel Flow — Vesselina Roussinova, Ram Balachandar, and Nihar Biswas; 135 (10), 812-24 (2009).

Rapid Profiling of an Evolving Bed Form Using Planar Laser Sheet Illumination — B. D. Younkin and D. F. Hill; 135 (10), 852-6 (2009).

Investigation of Two Elemental Error Sources in Boat-Mounted Acoustic Doppler Current Profiler Measurements by Large Eddy Simulations — T. Tokyay, G. Constantinescu, and Juan A. Gonzalez-Castro; 135 (11), 875-87 (2009).

Detached Eddy Simulation Investigation of Turbulence at a Circular Pier with Scour Hole — G. Kirkil, G. Constantinescu, and R. Ettema; 135 (11), 888-901 (2009).

Turbulent diffusion

Mass Transport in Shallow Turbulent Wake Flow by Planar Concentration Analysis Technique — Carl F. v. Carmer, Andreas C. Rummel, and Gerhard H. Jirka; 135 (4), 257-70 (2009).

Assessment of Hydrodynamic Separators for Storm-Water Treatment — Matthew A. Wilson, Omid Mohseni, John S. Gulliver, Raymond M. Hozalski, and Heinz G. Stefan; 135 (5), 383-92 (2009).

Turbulent flow

Turbulent Stresses at the Bottom Surface near an Abutment: Laboratory-Scale Numerical Experiment — Anna Teruzzi, Francesco Ballio, and Vincenzo Armenio; 135 (2), 106-17 (2009).

Nonlinear Mixing Length Model for Prediction of Secondary Currents in Uniform Channel Flows — Ismail Aydin; 135 (2), 146-53 (2009).

Particle Image Velocimetry Study of Flow near Trashrack Models — Jonathan M. Tsikata, Mark F. Tachie, and Chris Katopodis; 135 (8), 671-84 (2009).

3D Numerical Simulation for Water Flows and Sediment Deposition in Dam Areas of the Three Gorges Project — Yong-jun Lu and Zhao-yin Wang; 135 (9), 755-69 (2009).

Mean Flow and Turbulence around a Laboratory Spur Dike — Jennifer G. Duan; 135 (10), 803-11 (2009).

Characteristics of a Three-Dimensional Square Jet in the Vicinity of a Free Surface — Girish Sankar, Ram Balachandar, and Rupp Carriveau; 135 (11), 989-94 (2009).

Two phase flow

Measurement of Behavioral Properties of Entrained Ambient Water in a Stratified Bubble Plume — Dong-Guan Seol, Duncan B. Bryant, and Scott A. Socolofsky; 135 (11), 983-8 (2009).

Bubble Movement in Downward-Inclined Pipes — Stephan Glauser and Martin Wickenhäuser; 135 (11), 1012-5 (2009).

Kinetic Energy Approach to Dissolving Axisymmetric Multiphase Plumes — Kristian Etienne Einarsrud and Iver Brevik; 135 (12), 1041-51 (2009).

Two-dimensional flow

Investigation of the Importance of Spatial Resolution for Two-Dimensional Shallow-Water Model Accuracy — Siniša Družeta, Luka Sopta, Senka Maćešić, and Nelida Črnjarić-Žic; 135 (11), 917-25 (2009).

Two-dimensional models

Two-Dimensional Nonequilibrium Noncohesive and Cohesive Sediment Transport Model — M. C. Hung, T. Y. Hsieh, C. H. Wu, and J. C. Yang; 135 (5), 369-82 (2009).

Comparison of 1D/1D and 1D/2D Coupled (Sewer/Surface) Hydraulic Models for Urban Flood Simulation — Jorge Leandro, Albert S. Chen, Slobodan Djordjević, and Dragan A. Savić; 135 (6), 495-504 (2009).

Investigation of the Importance of Spatial Resolution for Two-Dimensional Shallow-Water Model Accuracy — Siniša Družeta, Luka Sopta, Senka Maćešić, and Nelida Črnjarić-Žic; 135 (11), 917-25 (2009).

Uncertainty principles

Real-Time Demand Estimation and Confidence Limit Analysis for Water Distribution Systems — Doosun Kang and Kevin Lansey; 135 (10), 825-37 (2009).

Investigation of Two Elemental Error Sources in Boat-Mounted Acoustic Doppler Current Profiler Measurements by Large Eddy Simulations — T. Tokyay, G. Constantinescu, and Juan A. Gonzalez-Castro; 135 (11), 875-87 (2009).

Sensitivity Analysis for Hydraulic Models — Jim W. Hall, Shawn A. Boyce, Yueling Wang, Richard J. Dawson, Stefano Tarantola, and Andrea Saltelli; 135 (11), 959-69 (2009).

Underground structures

Assessment of Hydrodynamic Separators for Storm-Water Treatment — Matthew A. Wilson, Omid Mohseni, John S. Gulliver, Raymond M. Hozalski, and Heinz G. Stefan; 135 (5), 383-92 (2009).

Uniform flow

Nonlinear Mixing Length Model for Prediction of Secondary Currents in Uniform Channel Flows — Ismail Aydin; 135 (2), 146-53 (2009).

Uniform Flow of Modified Bingham Fluids in Narrow Cross Sections — Alessandro Cantelli; 135 (8), 640-50 (2009).

Unsteady flow
Optimal Cross-Sectional Spacing in Preissmann Scheme 1D Hydrodynamic Models — A. Castellarin, G. Di Baldassarre, P. D. Bates, and A. Brath; 135 (2), 96-105 (2009).

Timescale Behavior of the Wall Shear Stress in Unsteady Laminar Pipe Flows — José Abreu and A. Betâmio de Almeida; 135 (5), 415-24 (2009).

Scouring at Bed Sills as a Response to Flash Floods — Matteo Tregnaghi, Andrea Marion, and Stephen Coleman; 135 (6), 466-75 (2009).

Maximum Local Scour Depth at Bridge Piers under Unsteady Flow — Jihn-Sung Lai, Wen-Yi Chang, and Chin-Lien Yen; 135 (7), 609-14 (2009).

Volume-Conservative Nonlinear Flood Routing — Roland K. Price; 135 (10), 838-45 (2009).

Urban areas
Hydraulics of Tangential Vortex Intake for Urban Drainage — Daeyoung Yu and Joseph H. W. Lee; 135 (3), 164-74 (2009).

Comparison of 1D/1D and 1D/2D Coupled (Sewer/Surface) Hydraulic Models for Urban Flood Simulation — Jorge Leandro, Albert S. Chen, Slobodan Djordjević, and Dragan A. Savić; 135 (6), 495-504 (2009).

Design of Street Sump Inlet — James C. Y. Guo, Ken A. MacKenzie, and Amanullah Mommandi; 135 (11), 1000-4 (2009).

Storm-Water Infiltration and Focused Recharge Modeling with Finite-Volume Two-Dimensional Richards Equation: Application to an Experimental Rain Garden — Jazmín E. Aravena and Alejandro Dussaillant; 135 (12), 1073-80 (2009).

Vanes
Investigation on the Dimensions and Shape of a Submerged Vane for Sediment Management in Alluvial Channels — Huei-Tau Ouyang; 135 (3), 209-17 (2009).

Effects of Vanes and W-Weir on Sediment Transport in Meandering Channels — Faruk Bhuiyan, Richard D. Hey, and Peter R. Wormleaton; 135 (5), 339-49 (2009).

Variance analysis
Sensitivity Analysis for Hydraulic Models — Jim W. Hall, Shawn A. Boyce, Yueling Wang, Richard J. Dawson, Stefano Tarantola, and Andrea Saltelli; 135 (11), 959-69 (2009).

Velocity
Local Balance Unsteady Friction Model — Giuseppe Pezzinga; 135 (1), 45-56 (2009).

Modeling of a Rough-Wall Oscillatory Boundary Layer Using Two-Equation Turbulence Models — Ahmad Sana, Abdul-Razzaq Ghumman, and Hitoshi Tanaka; 135 (1), 60-5 (2009).

Influence of Plunge Pool Geometry on High-Velocity Jet Impact Pressures and Pressure Propagation inside Fissured Rock Media — Pedro A. Manso, Erik F. R. Bollaert, and Anton J. Schleiss; 135 (10), 783-92 (2009).

Mean Flow and Turbulence around a Laboratory Spur Dike — Jennifer G. Duan; 135 (10), 803-11 (2009).

Flow Field in a Rectangular Basin with a Line Inlet and a Circular Outlet — Yaser Shammaa, David Z. Zhu, and Nallamuthu Rajaratnam; 135 (10), 857-64 (2009).

Bubble Movement in Downward-Inclined Pipes — Stephan Glauser and Martin Wickenhäuser; 135 (11), 1012-5 (2009).

Velocity distribution
Reduction of Bend Scour by an Outer Bank Footing: Flow Field and Turbulence — M. Roca, K. Blanckaert, and J. P. Martín-Vide; 135 (5), 361-8 (2009).

Verification
Experimental Verification of Incomplete Solute Mixing in a Pressurized Pipe Network with Multiple Cross Junctions — Inhong Song, Pedro Romero-Gomez, and Christopher Y. Choi; 135 (11), 1005-11 (2009).

Vortices
Hydraulics of Tangential Vortex Intake for Urban Drainage — Daeyoung Yu and Joseph H. W. Lee; 135 (3), 164-74 (2009).

Mass Transport in Shallow Turbulent Wake Flow by Planar Concentration Analysis Technique — Carl F. v. Carmer, Andreas C. Rummel, and Gerhard H. Jirka; 135 (4), 257-70 (2009).

Detached Eddy Simulation Investigation of Turbulence at a Circular Pier with Scour Hole — G. Kirkil, G. Constantinescu, and R. Ettema; 135 (11), 888-901 (2009).

Experimental Studies on Vertical Dense Jets in a Flowing Current — Endam Gungor and Philip J. W. Roberts; 135 (11), 935-48 (2009).

Critical Submergence for Multiple Pipe Intakes — Nevzat Yıldırım and Kerem Taştan; 135 (12), 1052-62 (2009).

Walls
Elemental T and Y Shapes of Tree Networks of Ducts with Various Cross-Sectional Shapes — W. Wechsatol, S. Lorente, A. Bejan, and J. C. Ordonez; 135 (2), 132-9 (2009).

Timescale Behavior of the Wall Shear Stress in Unsteady Laminar Pipe Flows — José Abreu and A. Betâmio de Almeida; 135 (5), 415-24 (2009).

Wastewater treatment
Resistance Characteristics of Surface Aerators — Achanta Ramakrishna Rao and Bimlesh Kumar; 135 (1), 38-44 (2009).

Wastewater treatment plants
Case Study: Intermediate Field Mixing for a Bank Discharge in a Natural River — Karen E. Dow, Peter M. Steffler, and David Z. Zhu; 135 (1), 1-12 (2009).

Water circulation
Flow Field in a Rectangular Basin with a Line Inlet and a Circular Outlet — Yaser Shammaa, David Z. Zhu, and Nallamuthu Rajaratnam; 135 (10), 857-64 (2009).

Water demand
Systematic Surge Protection for Worst-Case Transient Loadings in Water Distribution Systems — Bong Seog Jung and Bryan W. Karney; 135 (3), 218-23 (2009).

Leaks and Water Use Representation in Water Distribution System Models: Finding a Working Equivalence — Andrew F. Colombo and Bryan W. Karney; 135 (3), 234-9 (2009).

Water distribution systems
Systematic Surge Protection for Worst-Case Transient Loadings in Water Distribution Systems — Bong Seog Jung and Bryan W. Karney; 135 (3), 218-23 (2009).

Leaks and Water Use Representation in Water Distribution System Models: Finding a Working Equivalence — Andrew F. Colombo and Bryan W. Karney; 135 (3), 234-9 (2009).

Real-Time Demand Estimation and Confidence Limit Analysis for Water Distribution Systems — Doosun Kang and Kevin Lansey; 135 (10), 825-37 (2009).

Modeling the Behavior of Flow Regulating Devices in Water Distribution Systems Using Constrained Nonlinear Programming — Jochen W. Deuerlein, Angus R. Simpson, and Stephan Dempe; 135 (11), 970-82 (2009).

Experimental Verification of Incomplete Solute Mixing in a Pressurized Pipe Network with Multiple Cross Junctions — Inhong Song, Pedro Romero-Gomez, and Christopher Y. Choi; 135 (11), 1005-11 (2009).

Water flow
Discharge Characteristics of Weirs of Finite Crest Length — Amir Hossein Azimi and N. Rajaratnam; 135 (12), 1081-5 (2009).

Water hammer
Local Balance Unsteady Friction Model — Giuseppe Pezzinga; 135 (1), 45-56 (2009).

Wavelet-Galerkin Solution to the Water Hammer Equations — Ahmed M. Abdel Sattar, John R. Dickerson, and M. Hanif Chaudhry; 135 (4), 283-95 (2009).

Timescale Behavior of the Wall Shear Stress in Unsteady Laminar Pipe Flows — José Abreu and A. Betâmio de Almeida; 135 (5), 415-24 (2009).

Water management
Generalized Flow Rating Equations at Prototype Gated Spillways — Matahel Ansar and Zhiming Chen; 135 (7), 602-8 (2009).

Water pipelines
Experimental Verification of Incomplete Solute Mixing in a Pressurized Pipe Network with Multiple Cross Junctions — Inhong Song, Pedro Romero-Gomez, and Christopher Y. Choi; 135 (11), 1005-11 (2009).

Water pollution
Estimating Nonpoint Source Pollution in the Upper Yangtze River Using the Export Coefficient Model, Remote Sensing, and Geographical Information System — Rui-min Liu, Zhi-feng Yang, Zhen-yao Shen, Shaw L. Yu, Xiao-wen Ding, Xing Wu, and Fang Liu; 135 (9), 698-704 (2009).

Water quality
Depth-Dependent Dispersion Coefficient for Modeling of Vertical Solute Exchange in a Lake Bed under Surface Waves — Qin Qian, Jeffrey J. Clark, Vaughan R. Voller, and Heinz G. Stefan; 135 (3), 187-97 (2009).

Experimental Verification of Incomplete Solute Mixing in a Pressurized Pipe Network with Multiple Cross Junctions — Inhong Song, Pedro Romero-Gomez, and Christopher Y. Choi; 135 (11), 1005-11 (2009).

Experimental Verification of Incomplete Solute Mixing in a Pressurized Pipe Network with Multiple Cross Junctions — Inhong Song, Pedro Romero-Gomez, and Christopher Y. Choi; 135 (11), 1005-11 (2009).

Storm-Water Infiltration and Focused Recharge Modeling with Finite-Volume Two-Dimensional Richards Equation: Application to an Experimental Rain Garden — Jazmín E. Aravena and Alejandro Dussaillant; 135 (12), 1073-80 (2009).

Water sampling

Assessment of Hydrodynamic Separators for Storm-Water Treatment — Matthew A. Wilson, Omid Mohseni, John S. Gulliver, Raymond M. Hozalski, and Heinz G. Stefan; 135 (5), 383-92 (2009).

Water temperature

Analytical Solutions for Open-Channel Temperature Response to Unsteady Thermal Discharge and Boundary Heating — H. S. Tang and T. R. Keen; 135 (4), 327-32 (2009).

Water waves

Lagrangian Modeling of Weakly Nonlinear Nonhydrostatic Shallow Water Waves in Open Channels — Bishnu H. Devkota and Jörg Imberger; 135 (11), 926-34 (2009).

Maximum Level and Time to Peak of Dam-Break Waves on Mobile Horizontal Bed — João G. A. B. Leal, Rui M. L. Ferreira, and António H. Cardoso; 135 (11), 995-9 (2009).

Watersheds

Integrated Two-Dimensional Surface and Three-Dimensional Subsurface Contaminant Transport Model Considering Soil Erosion and Sorption — Zhiguo He, Weiming Wu, and Sam S. Y. Wang; 135 (12), 1028-40 (2009).

Waterways

Numerical Model for Sediment Transport and Bed Degradation in the Yangtze River Channel Downstream of Three Gorges Reservoir — Gang Zhou, Hong Wang, Xuejun Shao, and Dongdong Jia; 135 (9), 729-40 (2009).

Wave crest

Discharge Characteristics of Weirs of Finite Crest Length — Amir Hossein Azimi and N. Rajaratnam; 135 (12), 1081-5 (2009).

Wave forces

Hydrodynamic Investigation of Coastal Bridge Collapse during Hurricane Katrina — Qin Chen, Lixia Wang, and Haihong Zhao; 135 (3), 175-86 (2009).

Wave measurement

Observation and Simulation of Surface Waves in Two Water Supply Reservoirs — Emmet M. Owens; 135 (8), 663-70 (2009).

Wave propagation

Analytical Solutions for Open-Channel Temperature Response to Unsteady Thermal Discharge and Boundary Heating — H. S. Tang and T. R. Keen; 135 (4), 327-32 (2009).

Weirs

Combined Flow over Weir and under Gate — Jamal M. V. Samani and Mehdi Mazaheri; 135 (3), 224-7 (2009).

Effects of Vanes and W-Weir on Sediment Transport in Meandering Channels — Faruk Bhuiyan, Richard D. Hey, and Peter R. Wormleaton; 135 (5), 339-49 (2009).

Discharge Characteristics of Weirs of Finite Crest Length — Amir Hossein Azimi and N. Rajaratnam; 135 (12), 1081-5 (2009).

Wells

Analytical Solutions for Constant-Flux and Constant-Head Tests at a Finite-Diameter Well in a Wedge-Shaped Aquifer — Yen-Ju Chen, Hund-Der Yeh, and Shaw-Yang Yang; 135 (4), 333-7 (2009).

Width

Case Study: Equivalent Widths of the Middle Rio Grande, New Mexico — Claudia Leon, Pierre Y. Julien, and Drew C. Baird; 135 (4), 306-15 (2009).

Author Index

Abagale, Felix Kofi
Case Study: Hydraulic Modeling of Runoff Processes in Ghanaian Inland Valleys — Koichi Unami, Toshihiko Kawachi, Gordana Kranjac-Berisavljevic, Felix Kofi Abagale, Shigeya Maeda, and Junichiro Takeuchi; 135 (7), 539-53 (2009).

Abreu, José
Timescale Behavior of the Wall Shear Stress in Unsteady Laminar Pipe Flows — José Abreu and A. Betâmio de Almeida; 135 (5), 415-24 (2009).

Adei, Benjamin
Discussion of "Modeling Ventilation Phenomenon in Sanitary Sewer Systems: A System Theoretic Approach" by S. Edwini-Bonsu and P. M. Steffler — Benjamin Adei; 135 (5), 438 (2009).

Afshin, Hossein
Three-Dimensional Modeling of Density Current in a Straight Channel — Bahar Firoozabadi, Hossein Afshin, and Ehsan Aram; 135 (5), 393-402 (2009).

Ahmad, Zulfequar
Energy Dissipation on Block Ramps with Staggered Boulders — Zulfequar Ahmad, Nadimetla M. Petappa, and Bernhard Westrich; 135 (6), 522-6 (2009).

Ali, Md. Shahjahan
URANS Computations of Shallow Grid Turbulence — Ichiro Kimura, Wim S. J. Uijttewaal, Takashi Hosoda, and Md. Shahjahan Ali; 135 (2), 118-31 (2009).

Alonso, Carlos V.
Test of a Method to Calculate Near-Bank Velocity and Boundary Shear Stress — Jason W. Kean, Roger A. Kuhnle, J. Dungan Smith, Carlos V. Alonso, and Eddy J. Langendoen; 135 (7), 588-601 (2009).

Amador, António
Developing Flow Region and Pressure Fluctuations on Steeply Sloping Stepped Spillways — António Amador, Martí Sánchez-Juny, and Josep Dolz; 135 (12), 1092-100 (2009).

Ansar, Matahel
Generalized Flow Rating Equations at Prototype Gated Spillways — Matahel Ansar and Zhiming Chen; 135 (7), 602-8 (2009).

Antenucci, Jason P.
Using Impellers to Distribute Local Nutrient Loadings in a Stratified Lake: Lake Como, Italy — Sebastián Morillo, Jörg Imberger, Jason P. Antenucci, and Diego Copetti; 135 (7), 564-74 (2009).

Aram, Ehsan
Three-Dimensional Modeling of Density Current in a Straight Channel — Bahar Firoozabadi, Hossein Afshin, and Ehsan Aram; 135 (5), 393-402 (2009).

Aravena, Jazmín E.
Storm-Water Infiltration and Focused Recharge Modeling with Finite-Volume Two-Dimensional Richards Equation: Application to an Experimental Rain Garden — Jazmín E. Aravena and Alejandro Dussaillant; 135 (12), 1073-80 (2009).

Armenio, Vincenzo
Turbulent Stresses at the Bottom Surface near an Abutment: Laboratory-Scale Numerical Experiment — Anna Teruzzi, Francesco Ballio, and Vincenzo Armenio; 135 (2), 106-17 (2009).

Augustijn, Denie C. M.
Closure to "Interacting Divided Channel Method for Compound Channel Flow" by Fredrik Huthoff, Pieter C. Roos, Denie C. M. Augustijn, and Suzanne J. M. H. Hulscher — Fredrik Huthoff, Pieter C. Roos, Denie C. M. Augustijn, and Suzanne J. M. H. Hulscher; 135 (11), 1020-2 (2009).

Aydin, Ismail
Nonlinear Mixing Length Model for Prediction of Secondary Currents in Uniform Channel Flows — Ismail Aydin; 135 (2), 146-53 (2009).

Ayuso, J. L.
Closure to "Transcritical Flow due to Channel Contraction" by O. Castro-Orgaz, J. V. Giráldez, and J. L. Ayuso — O. Castro-Orgaz, J. V. Giráldez, and J. L. Ayuso; 135 (12), 1115-6 (2009).

Azimi, Amir Hossein
Discharge Characteristics of Weirs of Finite Crest Length — Amir Hossein Azimi and N. Rajaratnam; 135 (12), 1081-5 (2009).

Aziz, N. M.
Closure to "Investigation of Flow Upstream of Orifices" by D. B. Bryant, A. A. Khan, and N. M. Aziz — D. B. Bryant, A. A. Khan, and N. M. Aziz; 135 (2), 158 (2009).

Baddour, Raouf E.
Density Effect on Round Turbulent Hypersaline Fountain — Raouf E. Baddour and Hua Zhang; 135 (1), 57-9 (2009).

Baird, Drew C.
Case Study: Equivalent Widths of the Middle Rio Grande, New Mexico — Claudia Leon, Pierre Y. Julien, and Drew C. Baird; 135 (4), 306-15 (2009).

Balachandar, Ram
Local Scour Caused by Submerged Square Jets under Model Ice Cover — Jueyi Sui, M. A. A. Faruque, and Ram Balachandar; 135 (4), 316-9 (2009).
Reynolds Stress Anisotropy in Open-Channel Flow — Vesselina Roussinova, Ram Balachandar, and Nihar Biswas; 135 (10), 812-24 (2009).
Characteristics of a Three-Dimensional Square Jet in the Vicinity of a Free Surface — Girish Sankar, Ram Balachandar, and Rupp Carriveau; 135 (11), 989-94 (2009).

Ball, James E.
Discussion of "Automatic Calibration of the U.S. EPA SWMM Model for a Large Urban Catchment" by J. Barco, K. M. Wong, and M. K. Stenstrom — James E. Ball; 135 (12), 1108-10 (2009).

Ballio, Francesco
Turbulent Stresses at the Bottom Surface near an Abutment: Laboratory-Scale Numerical Experiment — Anna Teruzzi, Francesco Ballio, and Vincenzo Armenio; 135 (2), 106-17 (2009).
Constriction Effects in Clear-Water Scour at Abutments — Francesco Ballio, Anna Teruzzi, and Alessio Radice; 135 (2), 140-5 (2009).

Barco, Janet
Closure to "Automatic Calibration of the US EPA SWMM Model for a Large Urban Catchment" by Janet Barco, Kenneth M. Wong, and Michael K. Stenstrom — Janet Barco, Kenneth M. Wong, and Michael K. Stenstrom; 135 (12), 1110-1 (2009).

Barrett, Michael E.
Physical Modeling of Sheet Flow on Rough Impervious Surfaces — Randall J. Charbeneau, Jaehak Jeong, and Michael E. Barrett; 135 (6), 487-94 (2009).

Bates, P. D.
Optimal Cross-Sectional Spacing in Preissmann Scheme 1D Hydrodynamic Models — A. Castellarin, G. Di Baldassarre, P. D. Bates, and A. Brath; 135 (2), 96-105 (2009).

Baume, Jean-Pierre
Calculation of Contraction Coefficient under Sluice Gates and Application to Discharge Measurement — Gilles Belaud, Ludovic Cassan, and Jean-Pierre Baume; 135 (12), 1086-91 (2009).

Begnudelli, Lorenzo
Discussion of "Finite Volume Model for Shallow Water Equations with Improved Treatment of Source Terms" by Soumendra Nath Kuiry, Kiran Pramanik, and Dhrubajyoti Sen — Alessandro Valiani and Lorenzo Begnudelli; 135 (11), 1016-7 (2009).

Bejan, A.
Elemental T and Y Shapes of Tree Networks of Ducts with Various Cross-Sectional Shapes — W. Wechsatol, S. Lorente, A. Bejan, and J. C. Ordonez; 135 (2), 132-9 (2009).

Belaud, Gilles
Discussion of "Investigation of Flow Upstream of Orifices" by D. B. Bryant, A. A. Khan, and N. M. Aziz — Gilles Belaud and Xavier Litrico; 135 (2), 155-7 (2009).
Calculation of Contraction Coefficient under Sluice Gates and Application to Discharge Measurement — Gilles Belaud, Ludovic Cassan, and Jean-Pierre Baume; 135 (12), 1086-91 (2009).

Betâmio de Almeida, A.
Timescale Behavior of the Wall Shear Stress in Unsteady Laminar Pipe Flows — José Abreu and A. Betâmio de Almeida; 135 (5), 415-24 (2009).

Bhuiyan, Faruk
Effects of Vanes and W-Weir on Sediment Transport in Meandering Channels — Faruk Bhuiyan, Richard D. Hey, and Peter R. Wormleaton; 135

(5), 339-49 (2009).

Bingner, Ronald L.

Modeling the Evolution of Incised Streams. III: Model Application — Eddy J. Langendoen, Robert R. Wells, Robert E. Thomas, Andrew Simon, and Ronald L. Bingner; 135 (6), 476-86 (2009).

Binns, Andrew D.

On the Quantification of the Bed Development Time of Alluvial Meandering Streams — Andrew D. Binns and Ana Maria Ferreira da Silva; 135 (5), 350-60 (2009).

Biswas, Nihar

Reynolds Stress Anisotropy in Open-Channel Flow — Vesselina Roussinova, Ram Balachandar, and Nihar Biswas; 135 (10), 812-24 (2009).

Black, K. S.

Muddy Sediment Erosion: Insights from Field Studies — T. J. Tolhurst, K. S. Black, and D. M. Paterson; 135 (2), 73-87 (2009).

Blanckaert, K.

Reduction of Bend Scour by an Outer Bank Footing: Flow Field and Turbulence — M. Roca, K. Blanckaert, and J. P. Martín-Vide; 135 (5), 361-8 (2009).

Bollaert, Erik F. R.

Influence of Plunge Pool Geometry on High-Velocity Jet Impact Pressures and Pressure Propagation inside Fissured Rock Media — Pedro A. Manso, Erik F. R. Bollaert, and Anton J. Schleiss; 135 (10), 783-92 (2009).

Boyce, Shawn A.

Sensitivity Analysis for Hydraulic Models — Jim W. Hall, Shawn A. Boyce, Yueling Wang, Richard J. Dawson, Stefano Tarantola, and Andrea Saltelli; 135 (11), 959-69 (2009).

Brath, A.

Optimal Cross-Sectional Spacing in Preissmann Scheme 1D Hydrodynamic Models — A. Castellarin, G. Di Baldassarre, P. D. Bates, and A. Brath; 135 (2), 96-105 (2009).

Brevik, Iver

Kinetic Energy Approach to Dissolving Axisymmetric Multiphase Plumes — Kristian Etienne Einarsrud and Iver Brevik; 135 (12), 1041-51 (2009).

Briaud, Jean-Louis

Maximum Migration Distance of Meander Channel in Sand Using Hyperbolic Function Approach — Po-Hung Yeh, Namgyu Park, Kuang-An Chang, Hamn-Ching Chen, and Jean-Louis Briaud; 135 (8), 629-39 (2009).

Brown, Jim M. B.

Errata for "Approximation of Turbulent Wall Shear Stresses in Highly Transient Pipe Flows" by Alan E. Vardy and Jim M. B. Brown — Alan E. Vardy and Jim M. B. Brown; 135 (1), 71 (2009).

Bryant, D. B.

Closure to "Investigation of Flow Upstream of Orifices" by D. B. Bryant, A. A. Khan, and N. M. Aziz — D. B. Bryant, A. A. Khan, and N. M. Aziz; 135 (2), 158 (2009).

Bryant, Duncan B.

Measurement of Behavioral Properties of Entrained Ambient Water in a Stratified Bubble Plume — Dong-Guan Seol, Duncan B. Bryant, and Scott A. Socolofsky; 135 (11), 983-8 (2009).

Buffington, John M.

Unifying Criterion for the Velocity Reversal Hypothesis in Gravel-Bed Rivers — Diego Caamaño, Peter Goodwin, John M. Buffington, Jim C. P. Liou, and Steve Daley-Laursen; 135 (1), 66-70 (2009).

Burau, Jon R.

Turbulent Stresses and Secondary Currents in a Tidal-Forced Channel with Significant Curvature and Asymmetric Bed Forms — Derek A. Fong, Stephen G. Monismith, Mark T. Stacey, and Jon R. Burau; 135 (3), 198-208 (2009).

Caamaño, Diego

Unifying Criterion for the Velocity Reversal Hypothesis in Gravel-Bed Rivers — Diego Caamaño, Peter Goodwin, John M. Buffington, Jim C. P. Liou, and Steve Daley-Laursen; 135 (1), 66-70 (2009).

Calomino, Francesco

Control of Scour at Bridge Piers by a Downstream Bed Sill — Carmelo Grimaldi, Roberto Gaudio, Francesco Calomino, and António H. Cardoso; 135 (1), 13-21 (2009).

Countermeasures against Local Scouring at Bridge Piers: Slot and Combined System of Slot and Bed Sill — Carmelo Grimaldi, Roberto Gaudio, Francesco Calomino, and António H. Cardoso; 135 (5), 425-31 (2009).

Cantelli, Alessandro

Uniform Flow of Modified Bingham Fluids in Narrow Cross Sections — Alessandro Cantelli; 135 (8), 640-50 (2009).

Cardoso, António H.

Control of Scour at Bridge Piers by a Downstream Bed Sill — Carmelo Grimaldi, Roberto Gaudio, Francesco Calomino, and António H. Cardoso; 135 (1), 13-21 (2009).

Closure to "Flow Intensity Parameter in Pier Scour Experiments" by Gonzalo Simarro, Luis Teixeira, and António H. Cardoso — Gonzalo Simarro, Luis Teixeira, and António H. Cardoso; 135 (2), 155 (2009).

Countermeasures against Local Scouring at Bridge Piers: Slot and Combined System of Slot and Bed Sill — Carmelo Grimaldi, Roberto Gaudio, Francesco Calomino, and António H. Cardoso; 135 (5), 425-31 (2009).

Protecting Vertical-Wall Abutments with Riprap Mattresses — António H. Cardoso and Cristina M. S. Fael; 135 (6), 457-65 (2009).

Maximum Level and Time to Peak of Dam-Break Waves on Mobile Horizontal Bed — João G. A. B. Leal, Rui M. L. Ferreira, and António H. Cardoso; 135 (11), 995-9 (2009).

Carmer, Carl F. v.

Mass Transport in Shallow Turbulent Wake Flow by Planar Concentration Analysis Technique — Carl F. v. Carmer, Andreas C. Rummel, and Gerhard H. Jirka; 135 (4), 257-70 (2009).

Carollo, Francesco Giuseppe

New Solution of Classical Hydraulic Jump — Francesco Giuseppe Carollo, Vito Ferro, and Vincenzo Pampalone; 135 (6), 527-31 (2009).

Carriveau, Rupp

Characteristics of a Three-Dimensional Square Jet in the Vicinity of a Free Surface — Girish Sankar, Ram Balachandar, and Rupp Carriveau; 135 (11), 989-94 (2009).

Carvalho, Rita F.

Stepped Spillway with Hydraulic Jumps: Application of a Numerical Model to a Scale Model of a Conceptual Prototype — Rita F. Carvalho and Rui Martins; 135 (7), 615-9 (2009).

Cassan, Ludovic

Calculation of Contraction Coefficient under Sluice Gates and Application to Discharge Measurement — Gilles Belaud, Ludovic Cassan, and Jean-Pierre Baume; 135 (12), 1086-91 (2009).

Castellarin, A.

Optimal Cross-Sectional Spacing in Preissmann Scheme 1D Hydrodynamic Models — A. Castellarin, G. Di Baldassarre, P. D. Bates, and A. Brath; 135 (2), 96-105 (2009).

Castro-Orgaz, O.

Closure to "Transcritical Flow due to Channel Contraction" by O. Castro-Orgaz, J. V. Giráldez, and J. L. Ayuso — O. Castro-Orgaz, J. V. Giráldez, and J. L. Ayuso; 135 (12), 1115-6 (2009).

Chang, Chia-Jung

Hydraulic Jumps in an Inclined Rectangular Chute Contraction — Chyan-Deng Jan and Chia-Jung Chang; 135 (11), 949-58 (2009).

Chang, Kuang-An

Maximum Migration Distance of Meander Channel in Sand Using Hyperbolic Function Approach — Po-Hung Yeh, Namgyu Park, Kuang-An Chang, Hamn-Ching Chen, and Jean-Louis Briaud; 135 (8), 629-39 (2009).

Erratum for "Periodic Oscillation Caused by a Flow over a Vertical Drop Pool" by Chang Lin, Shih-Chun Hsieh, Kai-Joe Kuo, and Kuang-An Chang — Chang Lin, Shih-Chun Hsieh, Kai-Joe Kuo, and Kuang-An Chang; 135 (8), 695 (2009).

Closure to "Periodic Oscillation Caused by a Flow over a Vertical Drop Pool" by Chang Lin, Shih-Chun Hsieh, Kai-Joe Kuo, and Kuang-An Chang — Chang Lin, Shih-Chun Hsieh, Kai-Joe Kuo, and Kuang-An Chang; 135 (10), 870-1 (2009).

Chang, Wen-Yi

Discussion of "Flow Intensity Parameter in Pier Scour Experiments" by Gonzalo Simarro, Luis Teixeira, and António H. Cardoso — Jihn-Sung Lai, Wen-Yi Chang, and Chin-Lien Yen; 135 (2), 154-5 (2009).

Maximum Local Scour Depth at Bridge Piers under Unsteady Flow — Jihn-Sung Lai, Wen-Yi Chang, and Chin-Lien Yen; 135 (7), 609-14 (2009).

Chanson, Hubert

Development of the Bélanger Equation and Backwater Equation by Jean-Baptiste Bélanger (1828) — Hubert Chanson; 135 (3), 159-63 (2009).

Discussion of "Transcritical Flow due to Channel Contraction" by O. Castro-Orgaz, J. V. Giraldez, and J. L. Ayuso — Hubert Chanson; 135 (12), 1113-4 (2009).

Chao, Xiaobo

3D Numerical Simulation of Turbulent Buoyant Flow and Heat Transport in a Curved Open Channel — Xiaobo Chao, Yafei Jia, and Sam S. Y. Wang; 135 (7), 554-63 (2009).

Charbeneau, Randall J.

Bridge Rail Rating Curves and Submergence Characteristics — Joshua B. Klenzendorf and Randall J. Charbeneau; 135 (2), 88-95 (2009).

Closure to "Hydraulic Performance Curves for Highway Culverts" by R. J. Charbeneau, A. D. Henderson, and L. C. Sherman — R. J. Charbeneau; 135 (3), 244-5 (2009).

Physical Modeling of Sheet Flow on Rough Impervious Surfaces — Randall J. Charbeneau, Jaehak Jeong, and Michael E. Barrett; 135 (6), 487-94 (2009).

Chaudhry, M. Hanif

Wavelet-Galerkin Solution to the Water Hammer Equations — Ahmed M. Abdel Sattar, John R. Dickerson, and M. Hanif Chaudhry; 135 (4), 283-95 (2009).

Chen, Albert S.

Comparison of 1D/1D and 1D/2D Coupled (Sewer/Surface) Hydraulic Models for Urban Flood Simulation — Jorge Leandro, Albert S. Chen, Slobodan Djordjević, and Dragan A. Savić; 135 (6), 495-504 (2009).

Chen, C. C.

Bayesian Updating of Parameters for a Sediment Entrainment Model via Markov Chain Monte Carlo — Fu-Chun Wu and C. C. Chen; 135 (1), 22-37 (2009).

Chen, Hamn-Ching

Maximum Migration Distance of Meander Channel in Sand Using Hyperbolic Function Approach — Po-Hung Yeh, Namgyu Park, Kuang-An Chang, Hamn-Ching Chen, and Jean-Louis Briaud; 135 (8), 629-39 (2009).

Chen, Qin

Hydrodynamic Investigation of Coastal Bridge Collapse during Hurricane Katrina — Qin Chen, Lixia Wang, and Haihong Zhao; 135 (3), 175-86 (2009).

Chen, Yen-Ju

Analytical Solutions for Constant-Flux and Constant-Head Tests at a Finite-Diameter Well in a Wedge-Shaped Aquifer — Yen-Ju Chen, Hund-Der Yeh, and Shaw-Yang Yang; 135 (4), 333-7 (2009).

Chen, Zhiming

Generalized Flow Rating Equations at Prototype Gated Spillways — Matahel Ansar and Zhiming Chen; 135 (7), 602-8 (2009).

Chinnarasri, Chaiyuth

Closure to "Hydraulic Characteristics of Gabion-Stepped Weirs" by Chaiyuth Chinnarasri, Somchai Donjadee, and Udomsak Israngkura — Chaiyuth Chinnarasri; 135 (10), 872-3 (2009).

Choi, Christopher Y.

Experimental Verification of Incomplete Solute Mixing in a Pressurized Pipe Network with Multiple Cross Junctions — Inhong Song, Pedro Romero-Gomez, and Christopher Y. Choi; 135 (11), 1005-11 (2009).

Clark, Jeffrey J.

Depth-Dependent Dispersion Coefficient for Modeling of Vertical Solute Exchange in a Lake Bed under Surface Waves — Qin Qian, Jeffrey J. Clark, Vaughan R. Voller, and Heinz G. Stefan; 135 (3), 187-97 (2009).

Coleman, Stephen

Scouring at Bed Sills as a Response to Flash Floods — Matteo Tregnaghi, Andrea Marion, and Stephen Coleman; 135 (6), 466-75 (2009).

Colombini, Marco

Case Study: Design of Flood Control Systems on the Vara River by Numerical and Physical Modeling — Annunziato Siviglia, Alessandro Stocchino, and Marco Colombini; 135 (12), 1063-72 (2009).

Colombo, Andrew F.

Leaks and Water Use Representation in Water Distribution System Models: Finding a Working Equivalence — Andrew F. Colombo and Bryan W. Karney; 135 (3), 234-9 (2009).

Comuniello, Victor

Local Scour Downstream of Positive-Step Stilling Basins — Giuseppe Oliveto and Victor Comuniello; 135 (10), 846-51 (2009).

Constantinescu, G.

Investigation of Two Elemental Error Sources in Boat-Mounted Acoustic Doppler Current Profiler Measurements by Large Eddy Simulations — T. Tokyay, G. Constantinescu, and Juan A. Gonzalez-Castro; 135 (11), 875-87 (2009).

Detached Eddy Simulation Investigation of Turbulence at a Circular Pier with Scour Hole — G. Kirkil, G. Constantinescu, and R. Ettema; 135 (11), 888-901 (2009).

Copetti, Diego

Using Impellers to Distribute Local Nutrient Loadings in a Stratified Lake: Lake Como, Italy — Sebastián Morillo, Jörg Imberger, Jason P. Antenucci, and Diego Copetti; 135 (7), 564-74 (2009).

Črnjarić-Žic, Nelida

Investigation of the Importance of Spatial Resolution for Two-Dimensional Shallow-Water Model Accuracy — Siniša Družeta, Luka Sopta, Senka Maćešić, and Nelida Črnjarić-Žic; 135 (11), 917-25 (2009).

Dai, Albert

Discussion of "Note on the Analysis of Plunging of Density Flows" by Gary Parker and Horacio Toniolo — Albert Dai and Marcelo H. García; 135 (6), 532-3 (2009).

Daley-Laursen, Steve

Unifying Criterion for the Velocity Reversal Hypothesis in Gravel-Bed Rivers — Diego Caamaño, Peter Goodwin, John M. Buffington, Jim C. P. Liou, and Steve Daley-Laursen; 135 (1), 66-70 (2009).

Daly, Steven F.

Modeling Floating Objects at River Structures — Richard L. Stockstill, Steven F. Daly, and Mark A. Hopkins; 135 (5), 403-14 (2009).

da Silva, Ana Maria Ferreira

On the Quantification of the Bed Development Time of Alluvial Meandering Streams — Andrew D. Binns and Ana Maria Ferreira da Silva; 135 (5), 350-60 (2009).

Dawson, Richard J.

Sensitivity Analysis for Hydraulic Models — Jim W. Hall, Shawn A. Boyce, Yueling Wang, Richard J. Dawson, Stefano Tarantola, and Andrea Saltelli; 135 (11), 959-69 (2009).

de Almeida, Gustavo Adolfo M.

Riprap Stability: Transverse and Longitudinal versus Continuous Protections — Gustavo Adolfo M. de Almeida and Juan P. Martín-Vide; 135 (6), 447-56 (2009).

Dempe, Stephan

Modeling the Behavior of Flow Regulating Devices in Water Distribution Systems Using Constrained Nonlinear Programming — Jochen W. Deuerlein, Angus R. Simpson, and Stephan Dempe; 135 (11), 970-82 (2009).

Deng, Jinyun

Channel Degradation Downstream from the Three Gorges Project and Its Impacts on Flood Level — Yitian Li, Zhaohua Sun, Yun Liu, and Jinyun Deng; 135 (9), 718-28 (2009).

Deuerlein, Jochen W.

Modeling the Behavior of Flow Regulating Devices in Water Distribution Systems Using Constrained Nonlinear Programming — Jochen W. Deuerlein, Angus R. Simpson, and Stephan Dempe; 135 (11), 970-82 (2009).

Devkota, Bishnu H.

Lagrangian Modeling of the Dynamics of River and Floodplain Flow — Bishnu H. Devkota and Jörg Imberger; 135 (10), 771-82 (2009).

Lagrangian Modeling of Weakly Nonlinear Nonhydrostatic Shallow Water Waves in Open Channels — Bishnu H. Devkota and Jörg Imberger; 135 (11), 926-34 (2009).

Dhatrak, Anant I.

Discussion of "Hydraulic Performance of Step Aerator" by Anina Schiess Zamora, Michael Pfister, Willi H. Hager, and Hans-Erwin Minor — A. I. Dhatrak and S. P. Tatewar; 135 (7), 620 (2009).

Discussion of "Hydraulic Characteristics of Gabion-Stepped Weirs" by Chaiyuth Chinnarasri, Somachai Donjadee, and Udomsak Israngkura — Anant I. Dhatrak and Sandip P. Tatewar; 135 (10), 871-2 (2009).

Di Baldassarre, G.

Optimal Cross-Sectional Spacing in Preissmann Scheme 1D Hydrodynamic Models — A. Castellarin, G. Di Baldassarre, P. D. Bates, and A. Brath; 135 (2), 96-105 (2009).

Dickerson, John R.

Wavelet-Galerkin Solution to the Water Hammer Equations — Ahmed M. Abdel Sattar, John R. Dickerson, and M. Hanif Chaudhry; 135 (4), 283-95 (2009).

Ding, Xiao-wen

Estimating Nonpoint Source Pollution in the Upper Yangtze River Using the Export Coefficient Model, Remote Sensing, and Geographical Information System — Rui-min Liu, Zhi-feng Yang, Zhen-yao Shen, Shaw L. Yu, Xiao-wen Ding, Xing Wu, and Fang Liu; 135 (9), 698-704 (2009).

Djordjević, Slobodan

Comparison of 1D/1D and 1D/2D Coupled (Sewer/Surface) Hydraulic Models for Urban Flood Simulation — Jorge Leandro, Albert S. Chen, Slobodan Djordjević, and Dragan A. Savić; 135 (6), 495-504 (2009).

Dolz, José

Discussion of "Flow Patterns in a Four-Branch Junction with Supercritical Flow" by Emmanuel Mignot, Nicolas Rivière, Richard Perkins, and André Paquier — Leonardo S. Nanía, Manuel Gómez, and José Dolz; 135 (11), 1022-3 (2009).

Dolz, Josep

Developing Flow Region and Pressure Fluctuations on Steeply Sloping Stepped Spillways — António Amador, Martí Sánchez-Juny, and Josep Dolz; 135 (12), 1092-100 (2009).

Dow, Karen E.

Case Study: Intermediate Field Mixing for a Bank Discharge in a Natural River — Karen E. Dow, Peter M. Steffler, and David Z. Zhu; 135 (1), 1-12 (2009).

Družeta, Siniša
Investigation of the Importance of Spatial Resolution for Two-Dimensional Shallow-Water Model Accuracy — Siniša Družeta, Luka Sopta, Senka Maćešić, and Nelida Črnjarić-Žic; 135 (11), 917-25 (2009).
Duan, Jennifer G.
Mean Flow and Turbulence around a Laboratory Spur Dike — Jennifer G. Duan; 135 (10), 803-11 (2009).
Duan, Xue-hua
Ecological and Hydraulic Studies of Step-Pool Systems — Zhao-yin Wang, Charles Steven Melching, Xue-hua Duan, and Guo-an Yu; 135 (9), 705-17 (2009).
Dunning, Dennis J.
Case Study: Three-Dimensional Hydrodynamic Model of a Power Plant Thermal Discharge — Scott A. Lowe, Fred Schuepfer, and Dennis J. Dunning; 135 (4), 247-56 (2009).
Dussaillant, Alejandro
Storm-Water Infiltration and Focused Recharge Modeling with Finite-Volume Two-Dimensional Richards Equation: Application to an Experimental Rain Garden — Jazmín E. Aravena and Alejandro Dussaillant; 135 (12), 1073-80 (2009).
Eghbalzadeh, Afshin
Three-Dimensional Unsteady RANS Modeling of Discontinuous Gravity Currents in Rectangular Domains — Joongcheol Paik, Afshin Eghbalzadeh, and Fotis Sotiropoulos; 135 (6), 505-21 (2009).
Einarsrud, Kristian Etienne
Kinetic Energy Approach to Dissolving Axisymmetric Multiphase Plumes — Kristian Etienne Einarsrud and Iver Brevik; 135 (12), 1041-51 (2009).
El Kadi Abderrezzak, Kamal
Discussion of "Numerical and Experimental Study of Dividing Open-Channel Flows" by A. S. Ramamurthy, Junying Qu, and Diep Vo — Kamal El Kadi Abderrezzak and André Paquier; 135 (12), 1111-2 (2009).
Ettema, R.
Detached Eddy Simulation Investigation of Turbulence at a Circular Pier with Scour Hole — G. Kirkil, G. Constantinescu, and R. Ettema; 135 (11), 888-901 (2009).
Fael, Cristina M. S.
Protecting Vertical-Wall Abutments with Riprap Mattresses — António H. Cardoso and Cristina M. S. Fael; 135 (6), 457-65 (2009).
Falvey, Henry T.
Discussion of "Computing the Trajectory of Free Jets" by T. L. Wahl, K. H. Frizell, and E. A. Cohen — Henry T. Falvey; 135 (7), 624 (2009).
Faruque, M. A. A.
Local Scour Caused by Submerged Square Jets under Model Ice Cover — Jueyi Sui, M. A. A. Faruque, and Ram Balachandar; 135 (4), 316-9 (2009).
Feliu-Batlle, V.
Robust Fractional-Order *PI* Controller Implemented on a Laboratory Hydraulic Canal — V. Feliu-Batlle, R. Rivas-Perez, L. Sanchez-Rodriguez, and M. A. Ruiz-Torija; 135 (4), 271-82 (2009).
Ferreira, Rui M. L.
Discussion of "Laboratory Investigation of Mean Drag in a Random Array of Rigid, Emergent Cylinders" by Yukie Tanino and Heidi M. Nepf — Rui M. L. Ferreira, Ana M. Ricardo, and Mário J. Franca; 135 (8), 690-3 (2009).
Maximum Level and Time to Peak of Dam-Break Waves on Mobile Horizontal Bed — João G. A. B. Leal, Rui M. L. Ferreira, and António H. Cardoso; 135 (11), 995-9 (2009).
Ferro, Vito
New Solution of Classical Hydraulic Jump — Francesco Giuseppe Carollo, Vito Ferro, and Vincenzo Pampalone; 135 (6), 527-31 (2009).
Firoozabadi, Bahar
Three-Dimensional Modeling of Density Current in a Straight Channel — Bahar Firoozabadi, Hossein Afshin, and Ehsan Aram; 135 (5), 393-402 (2009).
Fong, Derek A.
Turbulent Stresses and Secondary Currents in a Tidal-Forced Channel with Significant Curvature and Asymmetric Bed Forms — Derek A. Fong, Stephen G. Monismith, Mark T. Stacey, and Jon R. Burau; 135 (3), 198-208 (2009).
Franca, Mário J.
Discussion of "Laboratory Investigation of Mean Drag in a Random Array of Rigid, Emergent Cylinders" by Yukie Tanino and Heidi M. Nepf — Rui M. L. Ferreira, Ana M. Ricardo, and Mário J. Franca; 135 (8), 690-3 (2009).
Fratino, Umberto
Discussion of "Computing the Trajectory of Free Jets" by T. L. Wahl, K. H. Frizell, and E. A. Cohen — Umberto Fratino and Floriana Maria Renna; 135 (7), 624-6 (2009).
Gailani, Joseph
Discussion of "Comparison of Two Techniques to Measure Sediment Erodibility in the Fox River, Wisconsin" by T. Ravens — Craig Jones and Joseph Gailani; 135 (5), 432-4 (2009).
García, Marcelo H.
Discussion of "Note on the Analysis of Plunging of Density Flows" by Gary Parker and Horacio Toniolo — Albert Dai and Marcelo H. García; 135 (6), 532-3 (2009).
Gaudio, Roberto
Control of Scour at Bridge Piers by a Downstream Bed Sill — Carmelo Grimaldi, Roberto Gaudio, Francesco Calomino, and António H. Cardoso; 135 (1), 13-21 (2009).
Countermeasures against Local Scouring at Bridge Piers: Slot and Combined System of Slot and Bed Sill — Carmelo Grimaldi, Roberto Gaudio, Francesco Calomino, and António H. Cardoso; 135 (5), 425-31 (2009).
Ghumman, Abdul-Razzaq
Modeling of a Rough-Wall Oscillatory Boundary Layer Using Two-Equation Turbulence Models — Ahmad Sana, Abdul-Razzaq Ghumman, and Hitoshi Tanaka; 135 (1), 60-5 (2009).
Giráldez, J. V.
Closure to "Transcritical Flow due to Channel Contraction" by O. Castro-Orgaz, J. V. Giráldez, and J. L. Ayuso — O. Castro-Orgaz, J. V. Giráldez, and J. L. Ayuso; 135 (12), 1115-6 (2009).
Gisonni, Corrado
Discussion of "Generalized Approach for Clear-Water Scour at Bridge Foundation Elements" by U. C. Kothyari, W. H. Hager, and G. Oliveto — Corrado Gisonni; 135 (3), 240-1 (2009).
Glauser, Stephan
Bubble Movement in Downward-Inclined Pipes — Stephan Glauser and Martin Wickenhäuser; 135 (11), 1012-5 (2009).
Gómez, Manuel
Discussion of "Flow Patterns in a Four-Branch Junction with Supercritical Flow" by Emmanuel Mignot, Nicolas Rivière, Richard Perkins, and André Paquier — Leonardo S. Nanía, Manuel Gómez, and José Dolz; 135 (11), 1022-3 (2009).
Gonzalez-Castro, Juan A.
Investigation of Two Elemental Error Sources in Boat-Mounted Acoustic Doppler Current Profiler Measurements by Large Eddy Simulations — T. Tokyay, G. Constantinescu, and Juan A. Gonzalez-Castro; 135 (11), 875-87 (2009).
Goodwin, Peter
Unifying Criterion for the Velocity Reversal Hypothesis in Gravel-Bed Rivers — Diego Caamaño, Peter Goodwin, John M. Buffington, Jim C. P. Liou, and Steve Daley-Laursen; 135 (1), 66-70 (2009).
Grimaldi, Carmelo
Control of Scour at Bridge Piers by a Downstream Bed Sill — Carmelo Grimaldi, Roberto Gaudio, Francesco Calomino, and António H. Cardoso; 135 (1), 13-21 (2009).
Countermeasures against Local Scouring at Bridge Piers: Slot and Combined System of Slot and Bed Sill — Carmelo Grimaldi, Roberto Gaudio, Francesco Calomino, and António H. Cardoso; 135 (5), 425-31 (2009).
Gulliver, John S.
Assessment of Hydrodynamic Separators for Storm-Water Treatment — Matthew A. Wilson, Omid Mohseni, John S. Gulliver, Raymond M. Hozalski, and Heinz G. Stefan; 135 (5), 383-92 (2009).
Gungor, Endam
Experimental Studies on Vertical Dense Jets in a Flowing Current — Endam Gungor and Philip J. W. Roberts; 135 (11), 935-48 (2009).
Guo, James C. Y.
Design of Street Sump Inlet — James C. Y. Guo, Ken A. MacKenzie, and Amanullah Mommandi; 135 (11), 1000-4 (2009).
Hager, Willi H.
Closure to "Generalized Approach for Clear-Water Scour at Bridge Foundation Elements" by U. C. Kothyari, W. H. Hager, and G. Oliveto — Umesh Chandra Kothyari, W. H. Hager, and G. Oliveto; 135 (3), 241-2 (2009).
Paul Felix Neményi: Engineer of Encyclopedic Mind — Willi H. Hager; 135 (6), 439-46 (2009).
Closure to "Hydraulic Performance of Step-Aerator" by Anina Schiess Zamora, Michael Pfister, Willi H. Hager, and Hans-Erwin Minor — Anina Schiess Zamora, Michael Pfister, Willi H. Hager, and Hans-Erwin Minor; 135 (7), 621-2 (2009).
Discussion of "Experimental Study of the Flow Field over Bottom Intake Racks" by Maurizio Righetti and Stefano Lanzoni — Willi H. Hager; 135 (10), 865 (2009).
Hall, Jim W.
Sensitivity Analysis for Hydraulic Models — Jim W. Hall, Shawn A. Boyce, Yueling Wang, Richard J. Dawson, Stefano Tarantola, and Andrea

Saltelli; 135 (11), 959-69 (2009).

He, Zhiguo

Integrated Two-Dimensional Surface and Three-Dimensional Subsurface Contaminant Transport Model Considering Soil Erosion and Sorption — Zhiguo He, Weiming Wu, and Sam S. Y. Wang; 135 (12), 1028-40 (2009).

Heller, Valentin

Discussion of "Computing the Trajectory of Free Jets" by Tony L. Wahl, Kathleen H. Frizell, and Elisabeth A. Cohen — Valentin Heller and Michael Pfister; 135 (7), 622-3 (2009).

Hey, Richard D.

Effects of Vanes and W-Weir on Sediment Transport in Meandering Channels — Faruk Bhuiyan, Richard D. Hey, and Peter R. Wormleaton; 135 (5), 339-49 (2009).

Hill, D. F.

Rapid Profiling of an Evolving Bed Form Using Planar Laser Sheet Illumination — B. D. Younkin and D. F. Hill; 135 (10), 852-6 (2009).

Hong, Jian-Hao

Closure to "Field Measurements and Simulation of Bridge Scour Depth Variations during Floods" by J.-Y. Lu, J.-H. Hong, C.-C. Su, C.-Y. Wang, and J.-S. Lai — Jau-Yau Lu, Jian-Hao Hong, Chih-Chiang Su, Chuan-Yi Wang, and Jihn-Sung Lai; 135 (11), 1018-9 (2009).

Hopkins, Mark A.

Modeling Floating Objects at River Structures — Richard L. Stockstill, Steven F. Daly, and Mark A. Hopkins; 135 (5), 403-14 (2009).

Hosoda, Takashi

URANS Computations of Shallow Grid Turbulence — Ichiro Kimura, Wim S. J. Uijttewaal, Takashi Hosoda, and Md. Shahjahan Ali; 135 (2), 118-31 (2009).

Hotchkiss, Rollin H.

Discussion of "Hydraulic Performance Curves for Highway Culverts" by R. J. Charbeneau, A. D. Henderson, and L. C. Sherman — Elizabeth A. Thiele, Rollin H. Hotchkiss, and Phillip L. Thompson; 135 (3), 242-4 (2009).

Hozalski, Raymond M.

Assessment of Hydrodynamic Separators for Storm-Water Treatment — Matthew A. Wilson, Omid Mohseni, John S. Gulliver, Raymond M. Hozalski, and Heinz G. Stefan; 135 (5), 383-92 (2009).

Hsieh, Shih-Chun

Erratum for "Periodic Oscillation Caused by a Flow over a Vertical Drop Pool" by Chang Lin, Shih-Chun Hsieh, Kai-Joe Kuo, and Kuang-An Chang — Chang Lin, Shih-Chun Hsieh, Kai-Joe Kuo, and Kuang-An Chang; 135 (8), 695 (2009).

Closure to "Periodic Oscillation Caused by a Flow over a Vertical Drop Pool" by Chang Lin, Shih-Chun Hsieh, Kai-Joe Kuo, and Kuang-An Chang — Chang Lin, Shih-Chun Hsieh, Kai-Joe Kuo, and Kuang-An Chang; 135 (10), 870-1 (2009).

Hsieh, T. Y.

Two-Dimensional Nonequilibrium Noncohesive and Cohesive Sediment Transport Model — M. C. Hung, T. Y. Hsieh, C. H. Wu, and J. C. Yang; 135 (5), 369-82 (2009).

Hulscher, Suzanne J. M. H.

Closure to "Interacting Divided Channel Method for Compound Channel Flow" by Fredrik Huthoff, Pieter C. Roos, Denie C. M. Augustijn, and Suzanne J. M. H. Hulscher — Fredrik Huthoff, Pieter C. Roos, Denie C. M. Augustijn, and Suzanne J. M. H. Hulscher; 135 (11), 1020-2 (2009).

Hung, M. C.

Two-Dimensional Nonequilibrium Noncohesive and Cohesive Sediment Transport Model — M. C. Hung, T. Y. Hsieh, C. H. Wu, and J. C. Yang; 135 (5), 369-82 (2009).

Huthoff, Fredrik

Closure to "Interacting Divided Channel Method for Compound Channel Flow" by Fredrik Huthoff, Pieter C. Roos, Denie C. M. Augustijn, and Suzanne J. M. H. Hulscher — Fredrik Huthoff, Pieter C. Roos, Denie C. M. Augustijn, and Suzanne J. M. H. Hulscher; 135 (11), 1020-2 (2009).

Imberger, Jörg

Using Impellers to Distribute Local Nutrient Loadings in a Stratified Lake: Lake Como, Italy — Sebastián Morillo, Jörg Imberger, Jason P. Antenucci, and Diego Copetti; 135 (7), 564-74 (2009).

Lagrangian Modeling of the Dynamics of River and Floodplain Flow — Bishnu H. Devkota and Jörg Imberger; 135 (10), 771-82 (2009).

Lagrangian Modeling of Weakly Nonlinear Nonhydrostatic Shallow Water Waves in Open Channels — Bishnu H. Devkota and Jörg Imberger; 135 (11), 926-34 (2009).

Jan, Chyan-Deng

Hydraulic Jumps in an Inclined Rectangular Chute Contraction — Chyan-Deng Jan and Chia-Jung Chang; 135 (11), 949-58 (2009).

Jeong, Jaehak

Physical Modeling of Sheet Flow on Rough Impervious Surfaces — Randall J. Charbeneau, Jaehak Jeong, and Michael E. Barrett; 135 (6), 487-94 (2009).

Jia, Dongdong

Numerical Model for Sediment Transport and Bed Degradation in the Yangtze River Channel Downstream of Three Gorges Reservoir — Gang Zhou, Hong Wang, Xuejun Shao, and Dongdong Jia; 135 (9), 729-40 (2009).

Jia, Y.

Numerical Study of Flow Affected by Bendway Weirs in Victoria Bendway, the Mississippi River — Y. Jia, S. Scott, Y. Xu, and S. S. Y. Wang; 135 (11), 902-16 (2009).

Jia, Yafei

3D Numerical Simulation of Turbulent Buoyant Flow and Heat Transport in a Curved Open Channel — Xiaobo Chao, Yafei Jia, and Sam S. Y. Wang; 135 (7), 554-63 (2009).

Jirka, Gerhard H.

Mass Transport in Shallow Turbulent Wake Flow by Planar Concentration Analysis Technique — Carl F. v. Carmer, Andreas C. Rummel, and Gerhard H. Jirka; 135 (4), 257-70 (2009).

Jones, Craig

Discussion of "Comparison of Two Techniques to Measure Sediment Erodibility in the Fox River, Wisconsin" by T. Ravens — Craig Jones and Joseph Gailani; 135 (5), 432-4 (2009).

Julien, Pierre Y.

Case Study: Equivalent Widths of the Middle Rio Grande, New Mexico — Claudia Leon, Pierre Y. Julien, and Drew C. Baird; 135 (4), 306-15 (2009).

Jung, Bong Seog

Systematic Surge Protection for Worst-Case Transient Loadings in Water Distribution Systems — Bong Seog Jung and Bryan W. Karney; 135 (3), 218-23 (2009).

Kang, Doosun

Real-Time Demand Estimation and Confidence Limit Analysis for Water Distribution Systems — Doosun Kang and Kevin Lansey; 135 (10), 825-37 (2009).

Karney, Bryan W.

Systematic Surge Protection for Worst-Case Transient Loadings in Water Distribution Systems — Bong Seog Jung and Bryan W. Karney; 135 (3), 218-23 (2009).

Leaks and Water Use Representation in Water Distribution System Models: Finding a Working Equivalence — Andrew F. Colombo and Bryan W. Karney; 135 (3), 234-9 (2009).

Katopodis, Chris

Particle Image Velocimetry Study of Flow near Trashrack Models — Jonathan M. Tsikata, Mark F. Tachie, and Chris Katopodis; 135 (8), 671-84 (2009).

Kawachi, Toshihiko

Case Study: Hydraulic Modeling of Runoff Processes in Ghanaian Inland Valleys — Koichi Unami, Toshihiko Kawachi, Gordana Kranjac-Berisavljevic, Felix Kofi Abagale, Shigeya Maeda, and Junichiro Takeuchi; 135 (7), 539-53 (2009).

Kean, Jason W.

Test of a Method to Calculate Near-Bank Velocity and Boundary Shear Stress — Jason W. Kean, Roger A. Kuhnle, J. Dungan Smith, Carlos V. Alonso, and Eddy J. Langendoen; 135 (7), 588-601 (2009).

Keen, T. R.

Analytical Solutions for Open-Channel Temperature Response to Unsteady Thermal Discharge and Boundary Heating — H. S. Tang and T. R. Keen; 135 (4), 327-32 (2009).

Kells, J. A.

Discussion of "Field Measurements and Simulation of Bridge Scour Depth Variations during Floods" by J.-Y. Lu, J.-H. Hong, C.-C. Su, C.-Y. Wang, and J.-S. Lai — J. A. Kells; 135 (11), 1018 (2009).

Khan, A. A.

Closure to "Investigation of Flow Upstream of Orifices" by D. B. Bryant, A. A. Khan, and N. M. Aziz — D. B. Bryant, A. A. Khan, and N. M. Aziz; 135 (2), 158 (2009).

Kimura, Ichiro

URANS Computations of Shallow Grid Turbulence — Ichiro Kimura, Wim S. J. Uijttewaal, Takashi Hosoda, and Md. Shahjahan Ali; 135 (2), 118-31 (2009).

Kirkil, G.

Detached Eddy Simulation Investigation of Turbulence at a Circular Pier with Scour Hole — G. Kirkil, G. Constantinescu, and R. Ettema; 135 (11), 888-901 (2009).

Klenzendorf, Joshua B.

Bridge Rail Rating Curves and Submergence Characteristics — Joshua B. Klenzendorf and Randall J. Charbeneau; 135 (2), 88-95 (2009).

Komura, Saburo
Discussion of "Periodic Oscillation Caused by a Flow over a Vertical Drop Pool" by Chang Lin, Shih-Chun Hsieh, Kai-Joe Kuo, and Kuang-An Chang — Saburo Komura; 135 (10), 869-70 (2009).
Kothyari, Umesh Chandra
Closure to "Generalized Approach for Clear-Water Scour at Bridge Foundation Elements" by U. C. Kothyari, W. H. Hager, and G. Oliveto — Umesh Chandra Kothyari, W. H. Hager, and G. Oliveto; 135 (3), 241-2 (2009).
Kranjac-Berisavljevic, Gordana
Case Study: Hydraulic Modeling of Runoff Processes in Ghanaian Inland Valleys — Koichi Unami, Toshihiko Kawachi, Gordana Kranjac-Berisavljevic, Felix Kofi Abagale, Shigeya Maeda, and Junichiro Takeuchi; 135 (7), 539-53 (2009).
Kuhnle, Roger A.
Test of a Method to Calculate Near-Bank Velocity and Boundary Shear Stress — Jason W. Kean, Roger A. Kuhnle, J. Dungan Smith, Carlos V. Alonso, and Eddy J. Langendoen; 135 (7), 588-601 (2009).
Kuiry, Soumendra Nath
Closure to "Finite Volume Model for Shallow Water Equations with Improved Treatment of Source Terms" by Soumendra Nath Kuiry, Kiran Pramanik, and Dhrubajyoti Sen — Soumendra Nath Kuiry and Dhrubajyoti Sen; 135 (11), 1017 (2009).
Kumar, Bimlesh
Resistance Characteristics of Surface Aerators — Achanta Ramakrishna Rao and Bimlesh Kumar; 135 (1), 38-44 (2009).
Kuo, Kai-Joe
Erratum for "Periodic Oscillation Caused by a Flow over a Vertical Drop Pool" by Chang Lin, Shih-Chun Hsieh, Kai-Joe Kuo, and Kuang-An Chang — Chang Lin, Shih-Chun Hsieh, Kai-Joe Kuo, and Kuang-An Chang; 135 (8), 695 (2009).
Closure to "Periodic Oscillation Caused by a Flow over a Vertical Drop Pool" by Chang Lin, Shih-Chun Hsieh, Kai-Joe Kuo, and Kuang-An Chang — Chang Lin, Shih-Chun Hsieh, Kai-Joe Kuo, and Kuang-An Chang; 135 (10), 870-1 (2009).
Lai, Jihn-Sung
Discussion of "Flow Intensity Parameter in Pier Scour Experiments" by Gonzalo Simarro, Luis Teixeira, and António H. Cardoso — Jihn-Sung Lai, Wen-Yi Chang, and Chin-Lien Yen; 135 (2), 154-5 (2009).
Maximum Local Scour Depth at Bridge Piers under Unsteady Flow — Jihn-Sung Lai, Wen-Yi Chang, and Chin-Lien Yen; 135 (7), 609-14 (2009).
Closure to "Field Measurements and Simulation of Bridge Scour Depth Variations during Floods" by J.-Y. Lu, J.-H. Hong, C.-C. Su, C.-Y. Wang, and J.-S. Lai — Jau-Yau Lu, Jian-Hao Hong, Chih-Chiang Su, Chuan-Yi Wang, and Jihn-Sung Lai; 135 (11), 1018-9 (2009).
Langendoen, Eddy J.
Modeling the Evolution of Incised Streams. III: Model Application — Eddy J. Langendoen, Robert R. Wells, Robert E. Thomas, Andrew Simon, and Ronald L. Bingner; 135 (6), 476-86 (2009).
Test of a Method to Calculate Near-Bank Velocity and Boundary Shear Stress — Jason W. Kean, Roger A. Kuhnle, J. Dungan Smith, Carlos V. Alonso, and Eddy J. Langendoen; 135 (7), 588-601 (2009).
Closure to "Modeling the Evolution of Incised Streams. II: Streambank Erosion" by Eddy J. Langendoen and Andrew Simon — Eddy J. Langendoen and Andrew Simon; 135 (12), 1107-8 (2009).
Lansey, Kevin
Real-Time Demand Estimation and Confidence Limit Analysis for Water Distribution Systems — Doosun Kang and Kevin Lansey; 135 (10), 825-37 (2009).
Lanzoni, Stefano
Closure to "Experimental Study of the Flow Field over Bottom Intake Racks" by Maurizio Righetti and Stefano Lanzoni — Maurizio Righetti and Stefano Lanzoni; 135 (10), 865-8 (2009).
Leal, João G. A. B.
Maximum Level and Time to Peak of Dam-Break Waves on Mobile Horizontal Bed — João G. A. B. Leal, Rui M. L. Ferreira, and António H. Cardoso; 135 (11), 995-9 (2009).
Leandro, Jorge
Comparison of 1D/1D and 1D/2D Coupled (Sewer/Surface) Hydraulic Models for Urban Flood Simulation — Jorge Leandro, Albert S. Chen, Slobodan Djordjević, and Dragan A. Savić; 135 (6), 495-504 (2009).
Lee, Joseph H. W.
Hydraulics of Tangential Vortex Intake for Urban Drainage — Daeyoung Yu and Joseph H. W. Lee; 135 (3), 164-74 (2009).
Lee, Seung Oh
Effect of Sediment Size Scaling on Physical Modeling of Bridge Pier Scour — Seung Oh Lee and Terry W. Sturm; 135 (10), 793-802 (2009).
Lei, Hongjun
Incipient Motion of Riverbank Sediments with Outflow Seepage — Liquan Xie, Hongjun Lei, Yuzhen Yu, and Xun Sun; 135 (3), 228-33 (2009).
Leon, Claudia
Case Study: Equivalent Widths of the Middle Rio Grande, New Mexico — Claudia Leon, Pierre Y. Julien, and Drew C. Baird; 135 (4), 306-15 (2009).
Le Roux, Jacobus P.
Discussion of "Comparison of Settling-Velocity-based Formulas for Threshold of Sediment Motion" by N.-S. Cheng — Jacobus P. Le Roux; 135 (7), 626-8 (2009).
Li, Yitian
Channel Degradation Downstream from the Three Gorges Project and Its Impacts on Flood Level — Yitian Li, Zhaohua Sun, Yun Liu, and Jinyun Deng; 135 (9), 718-28 (2009).
Lin, Chang
Erratum for "Periodic Oscillation Caused by a Flow over a Vertical Drop Pool" by Chang Lin, Shih-Chun Hsieh, Kai-Joe Kuo, and Kuang-An Chang — Chang Lin, Shih-Chun Hsieh, Kai-Joe Kuo, and Kuang-An Chang; 135 (8), 695 (2009).
Closure to "Periodic Oscillation Caused by a Flow over a Vertical Drop Pool" by Chang Lin, Shih-Chun Hsieh, Kai-Joe Kuo, and Kuang-An Chang — Chang Lin, Shih-Chun Hsieh, Kai-Joe Kuo, and Kuang-An Chang; 135 (10), 870-1 (2009).
Liou, Jim C. P.
Unifying Criterion for the Velocity Reversal Hypothesis in Gravel-Bed Rivers — Diego Caamaño, Peter Goodwin, John M. Buffington, Jim C. P. Liou, and Steve Daley-Laursen; 135 (1), 66-70 (2009).
Litrico, Xavier
Discussion of "Investigation of Flow Upstream of Orifices" by D. B. Bryant, A. A. Khan, and N. M. Aziz — Gilles Belaud and Xavier Litrico; 135 (2), 155-7 (2009).
Liu, Fang
Estimating Nonpoint Source Pollution in the Upper Yangtze River Using the Export Coefficient Model, Remote Sensing, and Geographical Information System — Rui-min Liu, Zhi-feng Yang, Zhen-yao Shen, Shaw L. Yu, Xiao-wen Ding, Xing Wu, and Fang Liu; 135 (9), 698-704 (2009).
Liu, Rui-min
Estimating Nonpoint Source Pollution in the Upper Yangtze River Using the Export Coefficient Model, Remote Sensing, and Geographical Information System — Rui-min Liu, Zhi-feng Yang, Zhen-yao Shen, Shaw L. Yu, Xiao-wen Ding, Xing Wu, and Fang Liu; 135 (9), 698-704 (2009).
Liu, Yun
Channel Degradation Downstream from the Three Gorges Project and Its Impacts on Flood Level — Yitian Li, Zhaohua Sun, Yun Liu, and Jinyun Deng; 135 (9), 718-28 (2009).
Lorente, S.
Elemental T and Y Shapes of Tree Networks of Ducts with Various Cross-Sectional Shapes — W. Wechsatol, S. Lorente, A. Bejan, and J. C. Ordonez; 135 (2), 132-9 (2009).
Lowe, Scott A.
Case Study: Three-Dimensional Hydrodynamic Model of a Power Plant Thermal Discharge — Scott A. Lowe, Fred Schuepfer, and Dennis J. Dunning; 135 (4), 247-56 (2009).
Lu, Jau-Yau
Closure to "Field Measurements and Simulation of Bridge Scour Depth Variations during Floods" by J.-Y. Lu, J.-H. Hong, C.-C. Su, C.-Y. Wang, and J.-S. Lai — Jau-Yau Lu, Jian-Hao Hong, Chih-Chiang Su, Chuan-Yi Wang, and Jihn-Sung Lai; 135 (11), 1018-9 (2009).
Lu, Yong-jun
3D Numerical Simulation for Water Flows and Sediment Deposition in Dam Areas of the Three Gorges Project — Yong-jun Lu and Zhao-yin Wang; 135 (9), 755-69 (2009).
Lyn, Dennis
Final Control Volume Analysis — Dennis Lyn; 135 (12), 1025-7 (2009).
Maćešić, Senka
Investigation of the Importance of Spatial Resolution for Two-Dimensional Shallow-Water Model Accuracy — Siniša Družeta, Luka Sopta, Senka Maćešić, and Nelida Črnjarić-Žic; 135 (11), 917-25 (2009).
MacKenzie, Ken A.
Design of Street Sump Inlet — James C. Y. Guo, Ken A. MacKenzie, and Amanullah Mommandi; 135 (11), 1000-4 (2009).
Maeda, Shigeya
Case Study: Hydraulic Modeling of Runoff Processes in Ghanaian Inland Valleys — Koichi

Unami, Toshihiko Kawachi, Gordana Kranjac-Berisavljevic, Felix Kofi Abagale, Shigeya Maeda, and Junichiro Takeuchi; 135 (7), 539-53 (2009).

Manso, Pedro A.

Influence of Plunge Pool Geometry on High-Velocity Jet Impact Pressures and Pressure Propagation inside Fissured Rock Media — Pedro A. Manso, Erik F. R. Bollaert, and Anton J. Schleiss; 135 (10), 783-92 (2009).

Marion, Andrea

Scouring at Bed Sills as a Response to Flash Floods — Matteo Tregnaghi, Andrea Marion, and Stephen Coleman; 135 (6), 466-75 (2009).

Martins, Rui

Stepped Spillway with Hydraulic Jumps: Application of a Numerical Model to a Scale Model of a Conceptual Prototype — Rita F. Carvalho and Rui Martins; 135 (7), 615-9 (2009).

Martín-Vide, J. P.

Reduction of Bend Scour by an Outer Bank Footing: Flow Field and Turbulence — M. Roca, K. Blanckaert, and J. P. Martín-Vide; 135 (5), 361-8 (2009).

Riprap Stability: Transverse and Longitudinal versus Continuous Protections — Gustavo Adolfo M. de Almeida and Juan P. Martín-Vide; 135 (6), 447-56 (2009).

Discussion of "Interacting Divided Channel Method for Compound Channel Flow" by Fredrik Huthoff, Pieter C. Roos, Denie C. M. Augustijn, and Suzanne J. M. H. Hulscher — P. J. M. Moreta and J. P. Martín-Vide; 135 (11), 1019-20 (2009).

Matos, Jorge

Skimming Flow in the Nonaerated Region of Stepped Spillways over Embankment Dams — Inês Meireles and Jorge Matos; 135 (8), 685-9 (2009).

Matoušek, Václav

Concentration Profiles and Solids Transport above Stationary Deposit in Enclosed Conduit — Václav Matoušek; 135 (12), 1101-6 (2009).

Mazaheri, Mehdi

Combined Flow over Weir and under Gate — Jamal M. V. Samani and Mehdi Mazaheri; 135 (3), 224-7 (2009).

Meireles, Inês

Skimming Flow in the Nonaerated Region of Stepped Spillways over Embankment Dams — Inês Meireles and Jorge Matos; 135 (8), 685-9 (2009).

Melching, Charles S.

Foreword to the Special Issue on the Yangtze River — Charles S. Melching and A. N. (Thanos) Papanicolaou; 135 (9), 697 (2009).

Ecological and Hydraulic Studies of Step-Pool Systems — Zhao-yin Wang, Charles Steven Melching, Xue-hua Duan, and Guo-an Yu; 135 (9), 705-17 (2009).

Formation and Evolution of the Jiuduansha Shoal over the Past 50 Years — Xiaoping Xie, Zhaoyin Wang, and Charles S. Melching; 135 (9), 741-54 (2009).

Mignot, Emmanuel

Closure to "Flow Patterns in a Four-Branch Junction with Supercritical Flow" by Emmanuel Mignot, Nicolas Rivière, Richard Perkins, and André Paquier — Emmanuel Mignot, Nicolas Rivière, Richard J. Perkins, André Paquier, and Gilbert Travin; 135 (11), 1023-4 (2009).

Minor, Hans-Erwin

Closure to "Hydraulic Performance of Step-Aerator" by Anina Schiess Zamora, Michael Pfister, Willi H. Hager, and Hans-Erwin Minor — Anina Schiess Zamora, Michael Pfister, Willi H. Hager, and Hans-Erwin Minor; 135 (7), 621-2 (2009).

Mohseni, Omid

Assessment of Hydrodynamic Separators for Storm-Water Treatment — Matthew A. Wilson, Omid Mohseni, John S. Gulliver, Raymond M. Hozalski, and Heinz G. Stefan; 135 (5), 383-92 (2009).

Mommandi, Amanullah

Design of Street Sump Inlet — James C. Y. Guo, Ken A. MacKenzie, and Amanullah Mommandi; 135 (11), 1000-4 (2009).

Monismith, Stephen G.

Turbulent Stresses and Secondary Currents in a Tidal-Forced Channel with Significant Curvature and Asymmetric Bed Forms — Derek A. Fong, Stephen G. Monismith, Mark T. Stacey, and Jon R. Burau; 135 (3), 198-208 (2009).

Moreta, P. J. M.

Discussion of "Interacting Divided Channel Method for Compound Channel Flow" by Fredrik Huthoff, Pieter C. Roos, Denie C. M. Augustijn, and Suzanne J. M. H. Hulscher — P. J. M. Moreta and J. P. Martín-Vide; 135 (11), 1019-20 (2009).

Morillo, Sebastián

Using Impellers to Distribute Local Nutrient Loadings in a Stratified Lake: Lake Como, Italy — Sebastián Morillo, Jörg Imberger, Jason P. Antenucci, and Diego Copetti; 135 (7), 564-74 (2009).

Nanía, Leonardo S.

Discussion of "Flow Patterns in a Four-Branch Junction with Supercritical Flow" by Emmanuel Mignot, Nicolas Rivière, Richard Perkins, and André Paquier — Leonardo S. Nanía, Manuel Gómez, and José Dolz; 135 (11), 1022-3 (2009).

Nepf, Heidi M.

Closure to "Laboratory Investigation of Mean Drag in a Random Array of Rigid, Emergent Cylinders" by Yukie Tanino and Heidi M. Nepf — Yukie Tanino and Heidi M. Nepf; 135 (8), 693-4 (2009).

Ohtsu, Iwao

Discussion of "Particle Image Velocity Measurements of Undular and Hydraulic Jumps" by J. M. Lennon and D. F. Hill — Iwao Ohtsu, Youichi Yasuda, and Masayuki Takahashi; 135 (5), 434-6 (2009).

Oliveto, Giuseppe

Closure to "Generalized Approach for Clear-Water Scour at Bridge Foundation Elements" by U. C. Kothyari, W. H. Hager, and G. Oliveto — Umesh Chandra Kothyari, W. H. Hager, and G. Oliveto; 135 (3), 241-2 (2009).

Local Scour Downstream of Positive-Step Stilling Basins — Giuseppe Oliveto and Victor Comuniello; 135 (10), 846-51 (2009).

Ordonez, J. C.

Elemental T and Y Shapes of Tree Networks of Ducts with Various Cross-Sectional Shapes — W. Wechsatol, S. Lorente, A. Bejan, and J. C. Ordonez; 135 (2), 132-9 (2009).

Ouyang, Huei-Tau

Investigation on the Dimensions and Shape of a Submerged Vane for Sediment Management in Alluvial Channels — Huei-Tau Ouyang; 135 (3), 209-17 (2009).

Owens, Emmet M.

Observation and Simulation of Surface Waves in Two Water Supply Reservoirs — Emmet M. Owens; 135 (8), 663-70 (2009).

Paik, Joongcheol

Three-Dimensional Unsteady RANS Modeling of Discontinuous Gravity Currents in Rectangular Domains — Joongcheol Paik, Afshin Eghbalzadeh, and Fotis Sotiropoulos; 135 (6), 505-21 (2009).

Pampalone, Vincenzo

New Solution of Classical Hydraulic Jump — Francesco Giuseppe Carollo, Vito Ferro, and Vincenzo Pampalone; 135 (6), 527-31 (2009).

Papanicolaou, A. N. (Thanos)

Foreword to the Special Issue on the Yangtze River — Charles S. Melching and A. N. (Thanos) Papanicolaou; 135 (9), 697 (2009).

Paquier, André

Closure to "Flow Patterns in a Four-Branch Junction with Supercritical Flow" by Emmanuel Mignot, Nicolas Rivière, Richard Perkins, and André Paquier — Emmanuel Mignot, Nicolas Rivière, Richard J. Perkins, André Paquier, and Gilbert Travin; 135 (11), 1023-4 (2009).

Discussion of "Numerical and Experimental Study of Dividing Open-Channel Flows" by A. S. Ramamurthy, Junying Qu, and Diep Vo — Kamal El Kadi Abderrezzak and André Paquier; 135 (12), 1111-2 (2009).

Park, Namgyu

Maximum Migration Distance of Meander Channel in Sand Using Hyperbolic Function Approach — Po-Hung Yeh, Namgyu Park, Kuang-An Chang, Hamn-Ching Chen, and Jean-Louis Briaud; 135 (8), 629-39 (2009).

Paterson, D. M.

Muddy Sediment Erosion: Insights from Field Studies — T. J. Tolhurst, K. S. Black, and D. M. Paterson; 135 (2), 73-87 (2009).

Perkins, Richard J.

Closure to "Flow Patterns in a Four-Branch Junction with Supercritical Flow" by Emmanuel Mignot, Nicolas Rivière, Richard Perkins, and André Paquier — Emmanuel Mignot, Nicolas Rivière, Richard J. Perkins, André Paquier, and Gilbert Travin; 135 (11), 1023-4 (2009).

Petappa, Nadimetla M.

Energy Dissipation on Block Ramps with Staggered Boulders — Zulfequar Ahmad, Nadimetla M. Petappa, and Bernhard Westrich; 135 (6), 522-6 (2009).

Pezzinga, Giuseppe

Local Balance Unsteady Friction Model — Giuseppe Pezzinga; 135 (1), 45-56 (2009).

Pfister, Michael

Closure to "Hydraulic Performance of Step-Aerator" by Anina Schiess Zamora, Michael Pfister, Willi H. Hager, and Hans-Erwin Minor — Anina Schiess Zamora, Michael Pfister, Willi H. Hager, and Hans-Erwin Minor; 135 (7), 621-2 (2009).

Discussion of "Computing the Trajectory of Free Jets" by Tony L. Wahl, Kathleen H. Frizell, and Elisabeth A. Cohen — Valentin Heller and Michael Pfister; 135 (7), 622-3 (2009).

Price, Roland K.

Volume-Conservative Nonlinear Flood Routing — Roland K. Price; 135 (10), 838-45 (2009).

Qian, Qin

Depth-Dependent Dispersion Coefficient for Modeling of Vertical Solute Exchange in a Lake Bed under Surface Waves — Qin Qian, Jeffrey J. Clark, Vaughan R. Voller, and Heinz G. Stefan; 135 (3), 187-97 (2009).

Qu, Junying

Closure to "Numerical and Experimental Study of Dividing Open-Channel Flows" by A. S. Ramamurthy, Junying Qu, and Diep Vo — A. S. Ramamurthy, Junying Qu, and Diep Vo; 135 (12), 1112-3 (2009).

Radice, Alessio

Constriction Effects in Clear-Water Scour at Abutments — Francesco Ballio, Anna Teruzzi, and Alessio Radice; 135 (2), 140-5 (2009).

Use of the Lorenz Curve to Quantify Statistical Nonuniformity of Sediment Transport Rate — Alessio Radice; 135 (4), 320-6 (2009).

Rajaratnam, Nallamuthu

Flow Field in a Rectangular Basin with a Line Inlet and a Circular Outlet — Yaser Shammaa, David Z. Zhu, and Nallamuthu Rajaratnam; 135 (10), 857-64 (2009).

Discharge Characteristics of Weirs of Finite Crest Length — Amir Hossein Azimi and N. Rajaratnam; 135 (12), 1081-5 (2009).

Ramamurthy, A. S.

Closure to "Numerical and Experimental Study of Dividing Open-Channel Flows" by A. S. Ramamurthy, Junying Qu, and Diep Vo — A. S. Ramamurthy, Junying Qu, and Diep Vo; 135 (12), 1112-3 (2009).

Rao, Achanta Ramakrishna

Resistance Characteristics of Surface Aerators — Achanta Ramakrishna Rao and Bimlesh Kumar; 135 (1), 38-44 (2009).

Renna, Floriana Maria

Discussion of "Computing the Trajectory of Free Jets" by T. L. Wahl, K. H. Frizell, and E. A. Cohen — Umberto Fratino and Floriana Maria Renna; 135 (7), 624-6 (2009).

Ricardo, Ana M.

Discussion of "Laboratory Investigation of Mean Drag in a Random Array of Rigid, Emergent Cylinders" by Yukie Tanino and Heidi M. Nepf — Rui M. L. Ferreira, Ana M. Ricardo, and Mário J. Franca; 135 (8), 690-3 (2009).

Righetti, Maurizio

Closure to "Experimental Study of the Flow Field over Bottom Intake Racks" by Maurizio Righetti and Stefano Lanzoni — Maurizio Righetti and Stefano Lanzoni; 135 (10), 865-8 (2009).

Rivas-Perez, R.

Robust Fractional-Order *PI* Controller Implemented on a Laboratory Hydraulic Canal — V. Feliu-Batlle, R. Rivas-Perez, L. Sanchez-Rodriguez, and M. A. Ruiz-Torija; 135 (4), 271-82 (2009).

Rivière, Nicolas

Closure to "Flow Patterns in a Four-Branch Junction with Supercritical Flow" by Emmanuel Mignot, Nicolas Rivière, Richard Perkins, and André Paquier — Emmanuel Mignot, Nicolas Rivière, Richard J. Perkins, André Paquier, and Gilbert Travin; 135 (11), 1023-4 (2009).

Roberts, Philip J. W.

Experimental Studies on Vertical Dense Jets in a Flowing Current — Endam Gungor and Philip J. W. Roberts; 135 (11), 935-48 (2009).

Roca, M.

Reduction of Bend Scour by an Outer Bank Footing: Flow Field and Turbulence — M. Roca, K. Blanckaert, and J. P. Martín-Vide; 135 (5), 361-8 (2009).

Roe, Philip L.

Numerical Oscillations in Pipe-Filling Bore Predictions by Shock-Capturing Models — Jose G. Vasconcelos, Steven J. Wright, and Philip L. Roe; 135 (4), 296-305 (2009).

Romero-Gomez, Pedro

Experimental Verification of Incomplete Solute Mixing in a Pressurized Pipe Network with Multiple Cross Junctions — Inhong Song, Pedro Romero-Gomez, and Christopher Y. Choi; 135 (11), 1005-11 (2009).

Roos, Pieter C.

Closure to "Interacting Divided Channel Method for Compound Channel Flow" by Fredrik Huthoff, Pieter C. Roos, Denie C. M. Augustijn, and Suzanne J. M. H. Hulscher — Fredrik Huthoff, Pieter C. Roos, Denie C. M. Augustijn, and Suzanne J. M. H. Hulscher; 135 (11), 1020-2 (2009).

Rousselot, Patric

Discussion of "Modeling the Evolution of Incised Streams. II: Streambank Erosion" by Eddy J. Langendoen and Andrew Simon — Patric Rousselot; 135 (12), 1107 (2009).

Roussinova, Vesselina

Reynolds Stress Anisotropy in Open-Channel Flow — Vesselina Roussinova, Ram Balachandar, and Nihar Biswas; 135 (10), 812-24 (2009).

Ruiz-Torija, M. A.

Robust Fractional-Order *PI* Controller Implemented on a Laboratory Hydraulic Canal — V. Feliu-Batlle, R. Rivas-Perez, L. Sanchez-Rodriguez, and M. A. Ruiz-Torija; 135 (4), 271-82 (2009).

Rummel, Andreas C.

Mass Transport in Shallow Turbulent Wake Flow by Planar Concentration Analysis Technique — Carl F. v. Carmer, Andreas C. Rummel, and Gerhard H. Jirka; 135 (4), 257-70 (2009).

Saltelli, Andrea

Sensitivity Analysis for Hydraulic Models — Jim W. Hall, Shawn A. Boyce, Yueling Wang, Richard J. Dawson, Stefano Tarantola, and Andrea Saltelli; 135 (11), 959-69 (2009).

Samani, Jamal M. V.

Combined Flow over Weir and under Gate — Jamal M. V. Samani and Mehdi Mazaheri; 135 (3), 224-7 (2009).

Sana, Ahmad

Modeling of a Rough-Wall Oscillatory Boundary Layer Using Two-Equation Turbulence Models — Ahmad Sana, Abdul-Razzaq Ghumman, and Hitoshi Tanaka; 135 (1), 60-5 (2009).

Sánchez-Juny, Martí

Developing Flow Region and Pressure Fluctuations on Steeply Sloping Stepped Spillways — António Amador, Martí Sánchez-Juny, and Josep Dolz; 135 (12), 1092-100 (2009).

Sanchez-Rodriguez, L.

Robust Fractional-Order *PI* Controller Implemented on a Laboratory Hydraulic Canal — V. Feliu-Batlle, R. Rivas-Perez, L. Sanchez-Rodriguez, and M. A. Ruiz-Torija; 135 (4), 271-82 (2009).

Sankar, Girish

Characteristics of a Three-Dimensional Square Jet in the Vicinity of a Free Surface — Girish Sankar, Ram Balachandar, and Rupp Carriveau; 135 (11), 989-94 (2009).

Sattar, Ahmed M. Abdel

Wavelet-Galerkin Solution to the Water Hammer Equations — Ahmed M. Abdel Sattar, John R. Dickerson, and M. Hanif Chaudhry; 135 (4), 283-95 (2009).

Savić, Dragan A.

Comparison of 1D/1D and 1D/2D Coupled (Sewer/Surface) Hydraulic Models for Urban Flood Simulation — Jorge Leandro, Albert S. Chen, Slobodan Djordjević, and Dragan A. Savić; 135 (6), 495-504 (2009).

Schleiss, Anton J.

Influence of Plunge Pool Geometry on High-Velocity Jet Impact Pressures and Pressure Propagation inside Fissured Rock Media — Pedro A. Manso, Erik F. R. Bollaert, and Anton J. Schleiss; 135 (10), 783-92 (2009).

Schuepfer, Fred

Case Study: Three-Dimensional Hydrodynamic Model of a Power Plant Thermal Discharge — Scott A. Lowe, Fred Schuepfer, and Dennis J. Dunning; 135 (4), 247-56 (2009).

Scott, S.

Numerical Study of Flow Affected by Bendway Weirs in Victoria Bendway, the Mississippi River — Y. Jia, S. Scott, Y. Xu, and S. S. Y. Wang; 135 (11), 902-16 (2009).

Sen, Dhrubajyoti

Closure to "Finite Volume Model for Shallow Water Equations with Improved Treatment of Source Terms" by Soumendra Nath Kuiry, Kiran Pramanik, and Dhrubajyoti Sen — Soumendra Nath Kuiry and Dhrubajyoti Sen; 135 (11), 1017 (2009).

Seol, Dong-Guan

Measurement of Behavioral Properties of Entrained Ambient Water in a Stratified Bubble Plume — Dong-Guan Seol, Duncan B. Bryant, and Scott A. Socolofsky; 135 (11), 983-8 (2009).

Shammaa, Yaser

Flow Field in a Rectangular Basin with a Line Inlet and a Circular Outlet — Yaser Shammaa, David Z. Zhu, and Nallamuthu Rajaratnam; 135 (10), 857-64 (2009).

Shao, Xuejun

Numerical Model for Sediment Transport and Bed Degradation in the Yangtze River Channel Downstream of Three Gorges Reservoir — Gang Zhou, Hong Wang, Xuejun Shao, and Dongdong Jia; 135 (9), 729-40 (2009).

Shen, Zhen-yao

Estimating Nonpoint Source Pollution in the Upper Yangtze River Using the Export Coefficient Model, Remote Sensing, and Geographical In-

formation System — Rui-min Liu, Zhi-feng Yang, Zhen-yao Shen, Shaw L. Yu, Xiao-wen Ding, Xing Wu, and Fang Liu; 135 (9), 698-704 (2009).

Simarro, Gonzalo

Closure to "Flow Intensity Parameter in Pier Scour Experiments" by Gonzalo Simarro, Luis Teixeira, and António H. Cardoso — Gonzalo Simarro, Luis Teixeira, and António H. Cardoso; 135 (2), 155 (2009).

Simon, Andrew

Modeling the Evolution of Incised Streams. III: Model Application — Eddy J. Langendoen, Robert R. Wells, Robert E. Thomas, Andrew Simon, and Ronald L. Bingner; 135 (6), 476-86 (2009).

Closure to "Modeling the Evolution of Incised Streams. II: Streambank Erosion" by Eddy J. Langendoen and Andrew Simon — Eddy J. Langendoen and Andrew Simon; 135 (12), 1107-8 (2009).

Simpson, Angus R.

Modeling the Behavior of Flow Regulating Devices in Water Distribution Systems Using Constrained Nonlinear Programming — Jochen W. Deuerlein, Angus R. Simpson, and Stephan Dempe; 135 (11), 970-82 (2009).

Siviglia, Annunziato

WAF Method and Splitting Procedure for Simulating Hydro- and Thermal-Peaking Waves in Open-Channel Flows — Annunziato Siviglia and Eleuterio F. Toro; 135 (8), 651-62 (2009).

Case Study: Design of Flood Control Systems on the Vara River by Numerical and Physical Modeling — Annunziato Siviglia, Alessandro Stocchino, and Marco Colombini; 135 (12), 1063-72 (2009).

Smith, J. Dungan

Test of a Method to Calculate Near-Bank Velocity and Boundary Shear Stress — Jason W. Kean, Roger A. Kuhnle, J. Dungan Smith, Carlos V. Alonso, and Eddy J. Langendoen; 135 (7), 588-601 (2009).

Socolofsky, Scott A.

Measurement of Behavioral Properties of Entrained Ambient Water in a Stratified Bubble Plume — Dong-Guan Seol, Duncan B. Bryant, and Scott A. Socolofsky; 135 (11), 983-8 (2009).

Song, Inhong

Experimental Verification of Incomplete Solute Mixing in a Pressurized Pipe Network with Multiple Cross Junctions — Inhong Song, Pedro Romero-Gomez, and Christopher Y. Choi; 135 (11), 1005-11 (2009).

Sopta, Luka

Investigation of the Importance of Spatial Resolution for Two-Dimensional Shallow-Water Model Accuracy — Siniša Družeta, Luka Sopta, Senka Maćešić, and Nelida Črnjarić-Žic; 135 (11), 917-25 (2009).

Sotiropoulos, Fotis

Three-Dimensional Unsteady RANS Modeling of Discontinuous Gravity Currents in Rectangular Domains — Joongcheol Paik, Afshin Eghbalzadeh, and Fotis Sotiropoulos; 135 (6), 505-21 (2009).

Srivastava, Rajesh

Discussion of "Effect of Convergence on Nonlinear Flow in Porous Media" by N. Bhanu Prakasham Reddy and P. Rama Mohan Rao — Rajesh Srivastava; 135 (6), 533-5 (2009).

Stacey, Mark T.

Turbulent Stresses and Secondary Currents in a Tidal-Forced Channel with Significant Curvature and Asymmetric Bed Forms — Derek A. Fong, Stephen G. Monismith, Mark T. Stacey, and Jon R. Burau; 135 (3), 198-208 (2009).

Stamou, Anastasios I.

Discussion of "Modeling 3D Supercritical Flow with Extended Shallow-Water Approach" by Susanne Krüger and Peter Rutschmann — Anastasios I. Stamou; 135 (5), 436-8 (2009).

Stefan, Heinz G.

Depth-Dependent Dispersion Coefficient for Modeling of Vertical Solute Exchange in a Lake Bed under Surface Waves — Qin Qian, Jeffrey J. Clark, Vaughan R. Voller, and Heinz G. Stefan; 135 (3), 187-97 (2009).

Assessment of Hydrodynamic Separators for Storm-Water Treatment — Matthew A. Wilson, Omid Mohseni, John S. Gulliver, Raymond M. Hozalski, and Heinz G. Stefan; 135 (5), 383-92 (2009).

Steffler, Peter M.

Case Study: Intermediate Field Mixing for a Bank Discharge in a Natural River — Karen E. Dow, Peter M. Steffler, and David Z. Zhu; 135 (1), 1-12 (2009).

Stenstrom, Michael K.

Closure to "Automatic Calibration of the US EPA SWMM Model for a Large Urban Catchment" by Janet Barco, Kenneth M. Wong, and Michael K. Stenstrom — Janet Barco, Kenneth M. Wong, and Michael K. Stenstrom; 135 (12), 1110-1 (2009).

Stocchino, Alessandro

Case Study: Design of Flood Control Systems on the Vara River by Numerical and Physical Modeling — Annunziato Siviglia, Alessandro Stocchino, and Marco Colombini; 135 (12), 1063-72 (2009).

Stockstill, Richard L.

Modeling Floating Objects at River Structures — Richard L. Stockstill, Steven F. Daly, and Mark A. Hopkins; 135 (5), 403-14 (2009).

Sturm, Terry W.

Effect of Sediment Size Scaling on Physical Modeling of Bridge Pier Scour — Seung Oh Lee and Terry W. Sturm; 135 (10), 793-802 (2009).

Su, Chih-Chiang

Closure to "Field Measurements and Simulation of Bridge Scour Depth Variations during Floods" by J.-Y. Lu, J.-H. Hong, C.-C. Su, C.-Y. Wang, and J.-S. Lai — Jau-Yau Lu, Jian-Hao Hong, Chih-Chiang Su, Chuan-Yi Wang, and Jihn-Sung Lai; 135 (11), 1018-9 (2009).

Sui, Jueyi

Local Scour Caused by Submerged Square Jets under Model Ice Cover — Jueyi Sui, M. A. A. Faruque, and Ram Balachandar; 135 (4), 316-9 (2009).

Sun, Xun

Incipient Motion of Riverbank Sediments with Outflow Seepage — Liquan Xie, Hongjun Lei, Yuzhen Yu, and Xun Sun; 135 (3), 228-33 (2009).

Sun, Zhaohua

Channel Degradation Downstream from the Three Gorges Project and Its Impacts on Flood Level — Yitian Li, Zhaohua Sun, Yun Liu, and Jinyun Deng; 135 (9), 718-28 (2009).

Tachie, Mark F.

Particle Image Velocimetry Study of Flow near Trashrack Models — Jonathan M. Tsikata, Mark F. Tachie, and Chris Katopodis; 135 (8), 671-84 (2009).

Takahashi, Masayuki

Discussion of "Particle Image Velocity Measurements of Undular and Hydraulic Jumps" by J. M. Lennon and D. F. Hill — Iwao Ohtsu, Youichi Yasuda, and Masayuki Takahashi; 135 (5), 434-6 (2009).

Takeuchi, Junichiro

Case Study: Hydraulic Modeling of Runoff Processes in Ghanaian Inland Valleys — Koichi Unami, Toshihiko Kawachi, Gordana Kranjac-Berisavljevic, Felix Kofi Abagale, Shigeya Maeda, and Junichiro Takeuchi; 135 (7), 539-53 (2009).

Tanaka, Hitoshi

Modeling of a Rough-Wall Oscillatory Boundary Layer Using Two-Equation Turbulence Models — Ahmad Sana, Abdul-Razzaq Ghumman, and Hitoshi Tanaka; 135 (1), 60-5 (2009).

Tang, H. S.

Analytical Solutions for Open-Channel Temperature Response to Unsteady Thermal Discharge and Boundary Heating — H. S. Tang and T. R. Keen; 135 (4), 327-32 (2009).

Tanino, Yukie

Closure to "Laboratory Investigation of Mean Drag in a Random Array of Rigid, Emergent Cylinders" by Yukie Tanino and Heidi M. Nepf — Yukie Tanino and Heidi M. Nepf; 135 (8), 693-4 (2009).

Tarantola, Stefano

Sensitivity Analysis for Hydraulic Models — Jim W. Hall, Shawn A. Boyce, Yueling Wang, Richard J. Dawson, Stefano Tarantola, and Andrea Saltelli; 135 (11), 959-69 (2009).

Taştan, Kerem

Critical Submergence for Multiple Pipe Intakes — Nevzat Yıldırım and Kerem Taştan; 135 (12), 1052-62 (2009).

Tatewar, S. P.

Discussion of "Hydraulic Performance of Step Aerator" by Anina Schiess Zamora, Michael Pfister, Willi H. Hager, and Hans-Erwin Minor — A. I. Dhatrak and S. P. Tatewar; 135 (7), 620 (2009).

Discussion of "Hydraulic Characteristics of Gabion-Stepped Weirs" by Chaiyuth Chinnarasri, Somachai Donjadee, and Udomsak Israngkura — Anant I. Dhatrak and Sandip P. Tatewar; 135 (10), 871-2 (2009).

Teixeira, Luis

Closure to "Flow Intensity Parameter in Pier Scour Experiments" by Gonzalo Simarro, Luis Teixeira, and António H. Cardoso — Gonzalo Simarro, Luis Teixeira, and António H. Cardoso; 135 (2), 155 (2009).

Termini, Donatella

Experimental Observations of Flow and Bed Processes in Large-Amplitude Meandering Flume — Donatella Termini; 135 (7), 575-87 (2009).

Teruzzi, Anna

Turbulent Stresses at the Bottom Surface near an Abutment: Laboratory-Scale Numerical Experiment — Anna Teruzzi, Francesco Ballio,

and Vincenzo Armenio; 135 (2), 106-17 (2009).
Constriction Effects in Clear-Water Scour at Abutments — Francesco Ballio, Anna Teruzzi, and Alessio Radice; 135 (2), 140-5 (2009).

Thiele, Elizabeth A.

Discussion of "Hydraulic Performance Curves for Highway Culverts" by R. J. Charbeneau, A. D. Henderson, and L. C. Sherman — Elizabeth A. Thiele, Rollin H. Hotchkiss, and Phillip L. Thompson; 135 (3), 242-4 (2009).

Thomas, Robert E.

Modeling the Evolution of Incised Streams. III: Model Application — Eddy J. Langendoen, Robert R. Wells, Robert E. Thomas, Andrew Simon, and Ronald L. Bingner; 135 (6), 476-86 (2009).

Thompson, Phillip L.

Discussion of "Hydraulic Performance Curves for Highway Culverts" by R. J. Charbeneau, A. D. Henderson, and L. C. Sherman — Elizabeth A. Thiele, Rollin H. Hotchkiss, and Phillip L. Thompson; 135 (3), 242-4 (2009).

Tokyay, T.

Investigation of Two Elemental Error Sources in Boat-Mounted Acoustic Doppler Current Profiler Measurements by Large Eddy Simulations — T. Tokyay, G. Constantinescu, and Juan A. Gonzalez-Castro; 135 (11), 875-87 (2009).

Tolhurst, T. J.

Muddy Sediment Erosion: Insights from Field Studies — T. J. Tolhurst, K. S. Black, and D. M. Paterson; 135 (2), 73-87 (2009).

Toorman, Erik A.

Errata and Addendum for "Vertical Mixing in the Fully Developed Turbulent Layer of Sediment-Laden Open-Channel Flow" by E. A. Toorman September 2008, Vol. 134, No. (9), , 1225–1235. 10.1061/(ASCE)0733-9429(2008)134:9(1225) — Erik A. Toorman; 135 (6), 538 (2009).

Toro, Eleuterio F.

WAF Method and Splitting Procedure for Simulating Hydro- and Thermal-Peaking Waves in Open-Channel Flows — Annunziato Siviglia and Eleuterio F. Toro; 135 (8), 651-62 (2009).

Travin, Gilbert

Closure to "Flow Patterns in a Four-Branch Junction with Supercritical Flow" by Emmanuel Mignot, Nicolas Rivière, Richard Perkins, and André Paquier — Emmanuel Mignot, Nicolas Rivière, Richard J. Perkins, André Paquier, and Gilbert Travin; 135 (11), 1023-4 (2009).

Tregnaghi, Matteo

Scouring at Bed Sills as a Response to Flash Floods — Matteo Tregnaghi, Andrea Marion, and Stephen Coleman; 135 (6), 466-75 (2009).

Tsikata, Jonathan M.

Particle Image Velocimetry Study of Flow near Trashrack Models — Jonathan M. Tsikata, Mark F. Tachie, and Chris Katopodis; 135 (8), 671-84 (2009).

Uijttewaal, Wim S. J.

URANS Computations of Shallow Grid Turbulence — Ichiro Kimura, Wim S. J. Uijttewaal, Takashi Hosoda, and Md. Shahjahan Ali; 135 (2), 118-31 (2009).

Unami, Koichi

Case Study: Hydraulic Modeling of Runoff Processes in Ghanaian Inland Valleys — Koichi Unami, Toshihiko Kawachi, Gordana Kranjac-Berisavljevic, Felix Kofi Abagale, Shigeya Maeda, and Junichiro Takeuchi; 135 (7), 539-53 (2009).

Valiani, Alessandro

Discussion of "Finite Volume Model for Shallow Water Equations with Improved Treatment of Source Terms" by Soumendra Nath Kuiry, Kiran Pramanik, and Dhrubajyoti Sen — Alessandro Valiani and Lorenzo Begnudelli; 135 (11), 1016-7 (2009).

Vardy, Alan E.

Errata for "Approximation of Turbulent Wall Shear Stresses in Highly Transient Pipe Flows" by Alan E. Vardy and Jim M. B. Brown — Alan E. Vardy and Jim M. B. Brown; 135 (1), 71 (2009).

Vasconcelos, Jose G.

Numerical Oscillations in Pipe-Filling Bore Predictions by Shock-Capturing Models — Jose G. Vasconcelos, Steven J. Wright, and Philip L. Roe; 135 (4), 296-305 (2009).

Vo, Diep

Closure to "Numerical and Experimental Study of Dividing Open-Channel Flows" by A. S. Ramamurthy, Junying Qu, and Diep Vo — A. S. Ramamurthy, Junying Qu, and Diep Vo; 135 (12), 1112-3 (2009).

Voller, Vaughan R.

Depth-Dependent Dispersion Coefficient for Modeling of Vertical Solute Exchange in a Lake Bed under Surface Waves — Qin Qian, Jeffrey J. Clark, Vaughan R. Voller, and Heinz G. Stefan; 135 (3), 187-97 (2009).

Wang, Chuan-Yi

Closure to "Field Measurements and Simulation of Bridge Scour Depth Variations during Floods" by J.-Y. Lu, J.-H. Hong, C.-C. Su, C.-Y. Wang, and J.-S. Lai — Jau-Yau Lu, Jian-Hao Hong, Chih-Chiang Su, Chuan-Yi Wang, and Jihn-Sung Lai; 135 (11), 1018-9 (2009).

Wang, Hong

Numerical Model for Sediment Transport and Bed Degradation in the Yangtze River Channel Downstream of Three Gorges Reservoir — Gang Zhou, Hong Wang, Xuejun Shao, and Dongdong Jia; 135 (9), 729-40 (2009).

Wang, Lixia

Hydrodynamic Investigation of Coastal Bridge Collapse during Hurricane Katrina — Qin Chen, Lixia Wang, and Haihong Zhao; 135 (3), 175-86 (2009).

Wang, Sam S. Y.

3D Numerical Simulation of Turbulent Buoyant Flow and Heat Transport in a Curved Open Channel — Xiaobo Chao, Yafei Jia, and Sam S. Y. Wang; 135 (7), 554-63 (2009).

Numerical Study of Flow Affected by Bendway Weirs in Victoria Bendway, the Mississippi River — Y. Jia, S. Scott, Y. Xu, and S. S. Y. Wang; 135 (11), 902-16 (2009).

Integrated Two-Dimensional Surface and Three-Dimensional Subsurface Contaminant Transport Model Considering Soil Erosion and Sorption — Zhiguo He, Weiming Wu, and Sam S. Y. Wang; 135 (12), 1028-40 (2009).

Wang, Yueling

Sensitivity Analysis for Hydraulic Models — Jim W. Hall, Shawn A. Boyce, Yueling Wang, Richard J. Dawson, Stefano Tarantola, and Andrea Saltelli; 135 (11), 959-69 (2009).

Wang, Zhao-yin

Ecological and Hydraulic Studies of Step-Pool Systems — Zhao-yin Wang, Charles Steven Melching, Xue-hua Duan, and Guo-an Yu; 135 (9), 705-17 (2009).

Formation and Evolution of the Jiuduansha Shoal over the Past 50 Years — Xiaoping Xie, Zhaoyin Wang, and Charles S. Melching; 135 (9), 741-54 (2009).

3D Numerical Simulation for Water Flows and Sediment Deposition in Dam Areas of the Three Gorges Project — Yong-jun Lu and Zhao-yin Wang; 135 (9), 755-69 (2009).

Wechsatol, W.

Elemental T and Y Shapes of Tree Networks of Ducts with Various Cross-Sectional Shapes — W. Wechsatol, S. Lorente, A. Bejan, and J. C. Ordonez; 135 (2), 132-9 (2009).

Wells, Robert R.

Modeling the Evolution of Incised Streams. III: Model Application — Eddy J. Langendoen, Robert R. Wells, Robert E. Thomas, Andrew Simon, and Ronald L. Bingner; 135 (6), 476-86 (2009).

Westrich, Bernhard

Energy Dissipation on Block Ramps with Staggered Boulders — Zulfequar Ahmad, Nadimetla M. Petappa, and Bernhard Westrich; 135 (6), 522-6 (2009).

Wickenhäuser, Martin

Bubble Movement in Downward-Inclined Pipes — Stephan Glauser and Martin Wickenhäuser; 135 (11), 1012-5 (2009).

Wilson, Matthew A.

Assessment of Hydrodynamic Separators for Storm-Water Treatment — Matthew A. Wilson, Omid Mohseni, John S. Gulliver, Raymond M. Hozalski, and Heinz G. Stefan; 135 (5), 383-92 (2009).

Wong, Kenneth M.

Closure to "Automatic Calibration of the US EPA SWMM Model for a Large Urban Catchment" by Janet Barco, Kenneth M. Wong, and Michael K. Stenstrom — Janet Barco, Kenneth M. Wong, and Michael K. Stenstrom; 135 (12), 1110-1 (2009).

Wormleaton, Peter R.

Effects of Vanes and W-Weir on Sediment Transport in Meandering Channels — Faruk Bhuiyan, Richard D. Hey, and Peter R. Wormleaton; 135 (5), 339-49 (2009).

Wright, Steven J.

Numerical Oscillations in Pipe-Filling Bore Predictions by Shock-Capturing Models — Jose G. Vasconcelos, Steven J. Wright, and Philip L. Roe; 135 (4), 296-305 (2009).

Wu, C. H.

Two-Dimensional Nonequilibrium Noncohesive and Cohesive Sediment Transport Model — M. C. Hung, T. Y. Hsieh, C. H. Wu, and J. C. Yang; 135 (5), 369-82 (2009).

Wu, Fu-Chun

Bayesian Updating of Parameters for a Sediment Entrainment Model via Markov Chain Monte Carlo — Fu-Chun Wu and C. C. Chen; 135 (1), 22-37 (2009).

Wu, Weiming
Sedimentation Engineering—Processes, Measurements, Modeling, and Practice (ASCE Manuals and Reports on Engineering Practice No. 110) — Book Reviews — Weiming Wu; 135 (6), 536-7 (2009).
Integrated Two-Dimensional Surface and Three-Dimensional Subsurface Contaminant Transport Model Considering Soil Erosion and Sorption — Zhiguo He, Weiming Wu, and Sam S. Y. Wang; 135 (12), 1028-40 (2009).

Wu, Xing
Estimating Nonpoint Source Pollution in the Upper Yangtze River Using the Export Coefficient Model, Remote Sensing, and Geographical Information System — Rui-min Liu, Zhi-feng Yang, Zhen-yao Shen, Shaw L. Yu, Xiao-wen Ding, Xing Wu, and Fang Liu; 135 (9), 698-704 (2009).

Xie, Liquan
Incipient Motion of Riverbank Sediments with Outflow Seepage — Liquan Xie, Hongjun Lei, Yuzhen Yu, and Xun Sun; 135 (3), 228-33 (2009).

Xie, Xiaoping
Formation and Evolution of the Jiuduansha Shoal over the Past 50 Years — Xiaoping Xie, Zhaoyin Wang, and Charles S. Melching; 135 (9), 741-54 (2009).

Xu, Y.
Numerical Study of Flow Affected by Bendway Weirs in Victoria Bendway, the Mississippi River — Y. Jia, S. Scott, Y. Xu, and S. S. Y. Wang; 135 (11), 902-16 (2009).

Yang, J. C.
Two-Dimensional Nonequilibrium Noncohesive and Cohesive Sediment Transport Model — M. C. Hung, T. Y. Hsieh, C. H. Wu, and J. C. Yang; 135 (5), 369-82 (2009).

Yang, Shaw-Yang
Analytical Solutions for Constant-Flux and Constant-Head Tests at a Finite-Diameter Well in a Wedge-Shaped Aquifer — Yen-Ju Chen, Hund-Der Yeh, and Shaw-Yang Yang; 135 (4), 333-7 (2009).

Yang, Zhi-feng
Estimating Nonpoint Source Pollution in the Upper Yangtze River Using the Export Coefficient Model, Remote Sensing, and Geographical Information System — Rui-min Liu, Zhi-feng Yang, Zhen-yao Shen, Shaw L. Yu, Xiao-wen Ding, Xing Wu, and Fang Liu; 135 (9), 698-704 (2009).

Yasuda, Youichi
Discussion of "Particle Image Velocity Measurements of Undular and Hydraulic Jumps" by J. M. Lennon and D. F. Hill — Iwao Ohtsu, Youichi Yasuda, and Masayuki Takahashi; 135 (5), 434-6 (2009).

Yeh, Hund-Der
Analytical Solutions for Constant-Flux and Constant-Head Tests at a Finite-Diameter Well in a Wedge-Shaped Aquifer — Yen-Ju Chen, Hund-Der Yeh, and Shaw-Yang Yang; 135 (4), 333-7 (2009).

Yeh, Po-Hung
Maximum Migration Distance of Meander Channel in Sand Using Hyperbolic Function Approach — Po-Hung Yeh, Namgyu Park, Kuang-An Chang, Hamn-Ching Chen, and Jean-Louis Briaud; 135 (8), 629-39 (2009).

Yen, Chin-Lien
Discussion of "Flow Intensity Parameter in Pier Scour Experiments" by Gonzalo Simarro, Luis Teixeira, and António H. Cardoso — Jihn-Sung Lai, Wen-Yi Chang, and Chin-Lien Yen; 135 (2), 154-5 (2009).
Maximum Local Scour Depth at Bridge Piers under Unsteady Flow — Jihn-Sung Lai, Wen-Yi Chang, and Chin-Lien Yen; 135 (7), 609-14 (2009).

Yıldırım, Nevzat
Critical Submergence for Multiple Pipe Intakes — Nevzat Yıldırım and Kerem Taştan; 135 (12), 1052-62 (2009).

Younkin, B. D.
Rapid Profiling of an Evolving Bed Form Using Planar Laser Sheet Illumination — B. D. Younkin and D. F. Hill; 135 (10), 852-6 (2009).

Yu, Daeyoung
Hydraulics of Tangential Vortex Intake for Urban Drainage — Daeyoung Yu and Joseph H. W. Lee; 135 (3), 164-74 (2009).

Yu, Guo-an
Ecological and Hydraulic Studies of Step-Pool Systems — Zhao-yin Wang, Charles Steven Melching, Xue-hua Duan, and Guo-an Yu; 135 (9), 705-17 (2009).

Yu, Shaw L.
Estimating Nonpoint Source Pollution in the Upper Yangtze River Using the Export Coefficient Model, Remote Sensing, and Geographical Information System — Rui-min Liu, Zhi-feng Yang, Zhen-yao Shen, Shaw L. Yu, Xiao-wen Ding, Xing Wu, and Fang Liu; 135 (9), 698-704 (2009).

Yu, Yuzhen
Incipient Motion of Riverbank Sediments with Outflow Seepage — Liquan Xie, Hongjun Lei, Yuzhen Yu, and Xun Sun; 135 (3), 228-33 (2009).

Zamora, Anina Schiess
Closure to "Hydraulic Performance of Step-Aerator" by Anina Schiess Zamora, Michael Pfister, Willi H. Hager, and Hans-Erwin Minor — Anina Schiess Zamora, Michael Pfister, Willi H. Hager, and Hans-Erwin Minor; 135 (7), 621-2 (2009).

Zhang, Hua
Density Effect on Round Turbulent Hypersaline Fountain — Raouf E. Baddour and Hua Zhang; 135 (1), 57-9 (2009).

Zhao, Haihong
Hydrodynamic Investigation of Coastal Bridge Collapse during Hurricane Katrina — Qin Chen, Lixia Wang, and Haihong Zhao; 135 (3), 175-86 (2009).

Zhou, Gang
Numerical Model for Sediment Transport and Bed Degradation in the Yangtze River Channel Downstream of Three Gorges Reservoir — Gang Zhou, Hong Wang, Xuejun Shao, and Dongdong Jia; 135 (9), 729-40 (2009).

Zhu, David Z.
Case Study: Intermediate Field Mixing for a Bank Discharge in a Natural River — Karen E. Dow, Peter M. Steffler, and David Z. Zhu; 135 (1), 1-12 (2009).
Flow Field in a Rectangular Basin with a Line Inlet and a Circular Outlet — Yaser Shammaa, David Z. Zhu, and Nallamuthu Rajaratnam; 135 (10), 857-64 (2009).